

INTERACTIVE FICTION IN CINEMATIC VIRTUAL REALITY: AN INTERACTIVE AND IMMERSIVE NARRATIVE (TEXT)

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Abstract - In its struggle to gain mass adoption, Virtual Reality (VR) industry and independent creators are exploring various types of content that may attract audiences. This paper presents a potential feature content for VR: Interactive Fiction in cinematic Virtual reality (IFcVR), a media and narrative hybrid resulting from the encounter between Interactive Fiction (IF), hypertextual fiction stories or hyperfiction, and cinematic Virtual Reality (cVR), that is the use of 360° videos. This hybridization of art and media creates immersive and interactive fiction films, in which the ‘interactor’ is placed within the scenic space and has the agency to change the course of the story. In the light of a new narrative and media product, the question of whether this can be considered a narrative text or not arises. This paper sheds some light on IFcVR and its narrative features according to Seymour Chatman’s structuralist model of narrative text, as well as its digital and interactive nature according to current research on the field of interactive narratives. The aim is to highlight the potential of IFcVR to become an entertainment content for the VR public.

Keywords: Cinematic Virtual Reality; Interactive Digital Narratives; Interactive Fiction; Interactive Narrative Text.

1. Introduction

Whether an Interactive Digital Narrative (IDN) artwork can be considered a text or not, is not a superficial question in the field of interactive digital narratives. As Barthes notices, there are countless forms of narrative in the world, genres, media, vehicles, and the expansion of this variety is closely related to technological development (Barthes 1975). Same thing happens in the field of IDNs: “interactive story *telling* relies on a predefined story, a specific plot concerning facts and occurrences. Only the telling of the story is done interactively” (Spierling et al 2012, p. 32). It is fair that new fields in narratology and new media – that emerge within the sociocultural mini revolutions that technological novelties cause – pose this simple question: can we consider this artifact a narrative text? What makes this artifact a narrative text? Which tools do we have to analyze the artifact in its narrative quality?

This contribution proposes a structuralist approach based on Seymour Chatman’s conception of the narrative text applied to a precise interactive immersive narrative artefact: the Interactive Fiction in Cinematic Virtual Reality (IFcVR), that is interactive immersive filmic experiences. Such model will be illustrated by describing the IFcVR, its technological and narrative components, in order to define it as a narrative text. The term ‘text’ in this paper is presented in parentheses as it is a current discussion between the IDN community if whether or not to use terminology from legacy media as literature, theatre, cinema, etc. The presented model can also offer a structuralist approach to the study of interactive narratives’ specific artefacts (or ‘texts’) of different types, be they web documentaries, interactive films or narrative videogames, among others.

2. The Interactive Immersive Film Experience

The Interactive Fiction in Cinematic Virtual Reality (IFcVR) can be defined as an Interactive Digital Narrative (IDN), placed at the intersection of Interactive Fiction (IF), the computer-mediated interactive fictional narratives and Cinematic VR (cVR), the creation of virtual

experiences that have a cinematic interface: 360° video (stereo and monoscopic), 2D 360° animations, 3D 360° animations and video, volumetric video in 360° VEs. cVR is distinguished from VR by not allowing the interactors to modify the VE or to interact with its agents in real time. In cVR, interactors can only observe the VE and activate interactive objects overlaid upon the interface. The cinematic interface does not allow user manipulations, it is a fixed and finite object. cVR is, after all, an enhanced film (or video) experience. Current research in the cVR field is focused on unveiling the film language and production methods of the linear cVR (Tricart, Mendiburu 2017). It is fascinating to be present inside the scene, and excellent results can be achieved by enhancing cinema's "spectatorial voyeurism" (Allen 2007, p. 130).

However, an extra level¹ of interactivity to the filmic immersive experience can overcome the incongruence generated by being immersed and having little agency within the scene-space. Through the implementation of an interactive fictional narrative structure, interactors can manipulate directly both the course of the story and the discoursivization of the filmic experience, besides looking at the omnidirectional image. In IFcVR, interactors can manipulate the transmission of the discourse by making decisions that modify the course of the story, stimulating their interest in repeating the experience to look for missed details or discover different endings. In this sense, IFcVR is a framework for the creation of interactive immersive filmic experiences.

The computational nature of IFcVR locates users' experience on their ways to interact with the storyworld. Human-computer Interfaces (HCI) developments allow unsuspected ways to interact with a film. Imagine that you have to literally run to escape from danger, or that the film becomes more or less frightening depending on your heart beats, to speak directly to the characters to make them take one or another direction, or even move objects with our thoughts to help the protagonist. Movement, biometrics, voice recognition and brain interfaces are some of the interactor's inputs that can be given to the virtual environment (VE) through current HCIs, interpreting the user's facial expressions, voice, gestures, and pose as inputs could provide a new level of 'natural interaction' (Lok, Hodges 2004).

Action or event inputs can be catalogued as conscious or unconscious, according to the type of HCI that activates the interactive object. This distinction obeys to the type of input given to the system: in the first case, interactors' input involves the reflection and conscious coordination of their cognitive abilities (e.g. moving head or body, talking, applauding, thinking, using a joystick); in the second case, data on the physiological functions of the interactor are collected by the system without requiring a conscious action of the interactor to modify the course of the story; only their emotions expressed by physiological changes will control the experience. Such creator's choice is at the root of the design that runs the IFcVR experience and is related to the artistic and narrative purposes of the creator.

Action inputs have two main functions within the IFcVR:

1. Jump between alternative Narrative Units (NUs).
2. Access or Activate extra-information: multimedia material that contains diegetic information enriching interactors' knowledge about the storyworld and its characters, or extradiegetic information with instructions on how to navigate the experience or paratext (Genette 2001). The multimedia material can be of different nature: text, images, audio, flat videos, 3D objects or even minigames.

IFcVR systems can be multi-sensory and multimodal, since the design of the system can foresee the integration of one or more HCIs to receive interactors inputs and to send them back

¹ The term 'level' is intended in Roland Barthes' conception: "levels are operations: a system of symbols, rules, etc., which must be used to represent expressions" (Barthes 1975, p. 242).

the system's outputs (e.g.: a sound, a vibration, or a change of temperature to confirm an action or to contextualize interactors in the storyworld). However, it is important to think about interfaces not as mere technological instruments, but as integral part of the storyworld; they must have a role and a meaning within the narrative experience. The selection of the interface(s) changes the relationship between interactor and system, and between interactor and storyworld.

3. IFcVR: an Interactive Digital Narrative (Text)²

The lack of conventions for the study of IDN's artefacts, is in part due to the novelty of the field, in part due to the wide spectrum of narrative forms, genres, media and vehicles that it covers, and in part also because narratology itself is a young³, extremely alive, field. After all, when we talk about narratives, we are talking about an essential human activity. The absence of a canonical set of narrative structures specific to IDN (Koenitz et al. 2015) raises a variety of issues when trying to identify a narrative text within the field. The core of the discussion 'can IDN experiences be considered narrative texts or not?' resides mainly in two aspects of the technological hypertextual nature of any IDN experience: the abolition of the fixed output (the possibility that each time an IDN experience is enjoyed by an interactor in different ways), and the fact that "the text is the only aspect directly accessible to the reader, and the text of any work of IDN incorporates the interface" (Knoller 2015, p. 52). Both characteristics have an impact on the levels of creation, enjoyment and meaning of the narrative quality of any IDN text. From now on, considerations on the narrative structure of IDNs will be done through its application to IFcVR and its feature, in order to identify its narrative features.

In *Language of New Media*, Manovich translates Roland Barthes concept of 'text' into the logic of computer-based products. He indicates that no matter how interactive, hypertextual, distributed or dynamic a product, the 'text' is in any case a finite object (Manovich 2009, p. 209). An IFcVR experience is a fiction film whose sequences or scenes have been detached from a single timeline organizing them one after the other. Instead, these unique sequences or scenes constitute a NU: pieces of narrative sequentially disseminated in a cyberspace. The links between NUs and extra material creates a form in the cyberspace: a mindmap. The mindmap is a structure whose conformation gives it a specific way of behaving, modeling the way to navigate through it. Interactors assemble the NUs and inscribe them in a finite temporal experience, other possible outputs remaining potential. In IFcVR, possible outputs are not infinite as there is a x number of NUs and a 'x' number of pathways. In this sense, IFcVR finitude makes it a text. This consideration applies also for any type of IDN, since so far there is not a system powerful enough to generate all the possibilities.

A narrative text, however, contains other characteristics besides finitude. As Genette points out, by narrative we can understand: the narrative statement, the discourse that relates a sequence of events and actions; the subject of the discourse, the sequence of events and actions themselves, be they fictitious or real; and the act of narrating itself (Genette 1980). Moreover, narrative

is a closed sequence, a temporal sequence. Every narrative is, therefore, a discourse. What distinguishes a discourse from the rest of the world, and by the same token contrasts it with the 'real' world, is the fact that a discourse must necessarily be made by someone (for discourse is not

² In this article, the word 'text' is treated with certain distance as the IDN needs to create its own terminology, in this open discussion using the term 'text' can be problematic as it is closely related to literature and legacy media.

³ If we take into consideration that the study of narrative structures had an important flourishing in the 20th century, and the term 'narratology' just appeared in 1969, coined by Tzvetan Todorov.

language), whereas one of the characteristics of the world is that it is uttered by no one (Metz 2007, p. 20).

In *Story and Discourse: Narrative Structure in Fiction and Film*, Seymour Chatman proposes a structuralist model (Figure 1) for the study of the structure of narrative texts (Seymour Chatman 1989). The model is based on the distinction between ‘story’ (a sequence of events plus its setting) and ‘discourse’ (the expression of the story, how it is narrated). Such a structuralist approach for the study of an interactive narrative is needed because, as it happens in narratology, the only object of study that we have is the text itself, the signifier of the story, what Gerard Genette simply refers to as “narrative” (Genette 1980, p. 27).

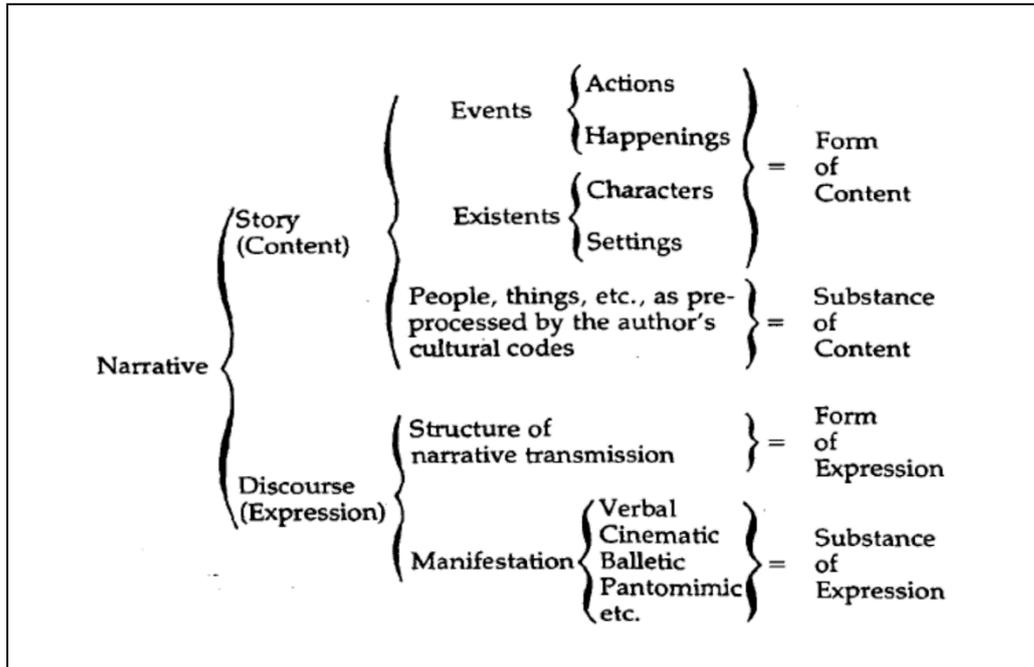


Figure 1.
Chatman's elements of narrative theory (Chatman 1978, p. 26)

How to study, then, a signifier that mutates from person to person, from iteration to iteration? In IFcVR, for instance, different media are contained within one another, in a layered architecture: a literary script inside film, film inside VR, VR inside a multisensory and multimodal interactive VR work. This matrioska-like combination of different media poses the challenge in distinguishing which media ‘transmits’ the story, and which one ‘manifests’ it. In this sense, the distinction that Chatman makes between “content” and “expression”, and its crossing with “substance” and “form” is of great help (Chatman 1989, p. 24):

- ‘Substance of Expression’ refers to the type of media that conveys the discourse.
- ‘Form of Expression’ stands for the organization of the narrative elements, that is, the narrative discourse.
- ‘Substance of Content’ refers to the representations of objects and actions in real or imaginary worlds, under creator’s view of the world.
- ‘Form of Content’ describes the elements of the story: the relationship between events (characters that perform actions and make things happen) and existents (characters profiles and settings of the storyworld).

Unlike narratives with a fixed output, like films or books, IDNs are based on the technological system that allows both creation and usage of the experience. Koenitz' theoretical framework on IDN uses the distinction established by Nick Montfort, between the computer program as the material artefact and the narrative as its output (Koenitz 2015, p. 96). Studies focused on creating a theory for IDNs cover a wide range of approaches. It is possible to account approaches that: apply narratology theories related to the 'Form of Content'⁴ to IDNs; identify intrinsic characteristics of IDN works (Koenitz et al 2013); categorize the existent IDN artefacts, mapping and organizing what has been done; propose new models that step away from legacy media models and take into consideration both system (the digital artifact) and process (the user interaction with the system) (Koenitz 2010); discuss the extent to which narratology theories can actually inspire interactive narrative technologies (Cavazza, Pizzi 2006).

However, theoretical research has not observed from a structural viewpoint the run-time narrative text: the narrative that interactors actually receives. Such endeavor starts from the understanding of interactive narrative as narrative, decomposing it into: story and discourse. In Fig 2, I am proposing a structural approach to understand the composition of the IFcVR text. Based on Chatman proposal, I divided the IFcVR into Story and Discourse, and, at a second level, both content and expression are divided into form and substance. Next, a differentiation is presented between what is part of the storyworld and what is part of the system, understood as Ted Nelson's *Literary Machine* (1987). The following conceptual map can also be applied to other types of digital interactive narratives, including linear cinematic VR, by subtracting a level of transmission.

The storyworld is an abstract space where characters and time coexist. Characters with goals and dreams, which are related to each other, creating conflicts and pleasant situations or stress. The creator takes specific moments from the storyworld and transforms them into reality by recreating them through cinematic VR. At this point, we find a further degree of complexity to that of linear cVR: we find ourselves at two levels of transmission narrative structure that belongs to the 'Substance of Expression', that is, to 'Manifestation' instead of to 'Transmission'. The authorial control of the creator arrives to the following transmission tasks:

- 'Narrative structure of transmission of the cVR unit': the filmic moment (scene, sequence) that will constitute a single narrative unit.
- 'Interactive narrative structure of transmission': the connections that the creator makes between cVR units, giving a form and a specific behaviour to the network or mind map.

Finally, the 'Form of Expression' is partially an interactor's task. This is related to the storyworld through the system, and simultaneously can manipulate the system through a human-computer interface. While sending inputs to select the cVR units and receive the cVR unit together with other outputs of the system, a discoursivization process is generated, in which floating elements of a mind map are aligned sequentially by the interactor's action. As we can see, storyworld and system merge on the manifestation or 'Substance of Expression of the Discourse'.

⁴ These theories are based on the ideas of narratologists likes Propp, Greimas, Campbell or Jennings, who propose conceptual tools to understand archetypal characters and their relationships, dramatic progression, hero's stages, all elements that belong to the content.

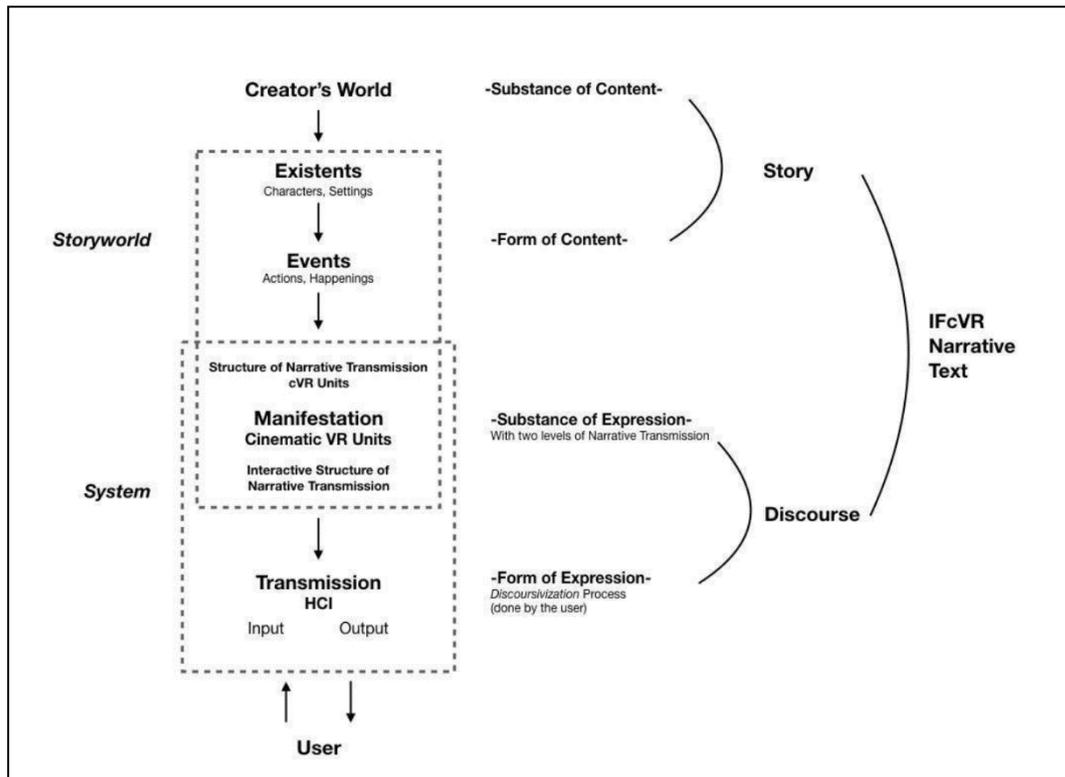


Figure 2.
Elements of the IFcVR narrative text

The presented structuralist approach can be applied to the study of different kinds of interactive digital narratives, even though it was conceived through the study of the IFcVR. Such approach is meant to help authors in the conception of their creative process. It also represents a conceptual tool for researchers when analyzing a specific interactive narrative text, that is, a finite IDN work of art, in all its components, regarding both story and discourse, following the creative process from the creator's world of ideas until achieving its modalities of transmission through the human-computer interfaces.

Regarding specifically the IFcVR, I consider that the path that VR films will now take on should abandon linearity to delve into the creation of interactive structures for the transmission of the immersive filmic narrative. Not only because the immersion is increased by interactivity, but mostly because of the contrast that is generated when we are completely abstracted and surrounded by an alien reality, without being able to have any effect on it. We can be voyeurists in the movie theater or in our homes, where to observe someone else's life we must not abandon our own reality. But when we are asked to make a fictional pact in which we give full control of our cognition to a system, and therefore to someone who is behind the creation, a legitimate demand is to have the possibility to interact with that world, or better, to be able of fully 'being'.

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