TOWARDS COMPUTER GAME STUDIES

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PART 1: NARRATOLOGY AND LUDOLOGY

It is relatively stress-free to write about computer games as nothing too much has been said yet, and almost anything goes. The situation is pretty much the same in what comes to writing about games and gaming in general. The sad fact with alarming cumulative consequences is that they are under-theorized; there are Huizinga, Caillois and Ehrmann of course,[1] and libraries full of board game studies,[2] in addition to game theory and bits and pieces of philosophy — most notably those of Wittgenstein's – but they won't get us very far with computer games. So if there already is or soon will be a legitimate field for computer game studies, this field is also very open to intrusions and colonisations from the already organized scholarly tribes. Resisting and beating them is the goal of our first survival game in this paper, as what these emerging studies need is independence, or at least relative independence.

It should be self-evident that we can't apply print narratology, hypertext theory, film, or theatre and drama studies directly to computer games, but it isn't. Therefore the majority of the random notes and power-ups that follow will be spent modifying the pre-suppositions firmly based on the academic denial of helplessness. Obviously I need a strategy, and fortunately I have one: to use the theories of those would-be-colonisers against themselves. For example, as we shall soon see, if you actually know your narrative theory (instead of resorting to outdated notions of Aristotle, Propp, or Victorian novels) you won't argue that games are (interactive or procedural) narratives or anything even remotely similar. Luckily, outside theory, people are usually excellent at distinguishing between narrative situations and gaming situations: if I'll throw a ball at you, I don't expect you to drop it and wait until it starts telling stories.

It's good we don't have to start from scratch, as there have been attempts to locate, describe, and analyse the basic components and aspects of the gaming situation, essentially different from the basic constituents of narrative and dramatic situations. I'm thinking here of Chris Crawford's early classic *The Art of Computer Game Design,* Gonzalo Frasca's and Jesper Juul's papers on ludology, and most of all Espen Aarseth's articles on computer games and cybertext theory.[3]

First of all, I would like to demonstrate or test a safe and painless passage from narratives to games by trying to exhaust classic narratology.[4] Most naïve comparisons between narratives and games usually result from too narrow, broad, or feeble definitions of the former: usually it comes down to discovering "plots" and "characters" in both modes – games and narratives. However, we should know that is not good enough because we can find those events and existents in drama as well – clearly its own mode. The minimal definition of narrative derived from Gerald Prince and Gerard Genette states basically that there must be two things or components to constitute a narrative: a temporal sequence of events (a plot if you want to water down the concept); and a narrative situation (with both narrators and narratees for starters). I think we can safely say we cannot find narrative situations within games. (Or if and when we sometimes do, most probably in "Myst" or "The Last Express," the narrative components are then at the service of an ergodic dominant).

To be brief: a story, a back-story, or a plot is not enough. A sequence of events enacted constitutes a drama or a performance, a sequence of events recounted constitutes a narrative, and perhaps a sequence of events produced or played out under certain circumstances and following formal rules constitutes a game. This is quite trivial but crucial; there are sequences of events that do not become or form stories (like in "Tetris" for example). The reason for this is equally simple. In games, the dominant temporal relation is the one between user time and event time, not the narrative one between story time and discourse time.

Regarding the fallacy of recognizing similar characters or existents in games, drama, and narratives, the situation is similar. In computer games you can operate your character if there is any in the first place, perhaps also discuss with other characters or voices, and the characters can be dynamic and developing, or they can change themselves with level points and power-ups. These entities are definitely not acting or behaving like traditional narrators, characters, directors, and actors, their supposed counterparts in literature, film, and on stage.

To sum up: different existents, different event structures, and different situations. On the other hand narratology is not completely useless, if its key concepts and distinctions are not taken for granted but traced back to their roots. In the following that is exactly what we try to do. The elementary categories of classic narratology are transformed into an open series of ludological components, if not for any other reason than to further specify the features inherent to games.

Before going into the finer points of ludology, the more or less peaceful co-existence of local traditions and global technologies should also be acknowledged. There is no guarantee whatsoever that the aesthetic traditions of the West are relevant to game studies in general and computer game studies in particular. It is tempting to assume that one reason for the never-ending series of unsuccessful game definitions is the need or urge to make clear-cut distinctions and compartmentalize aesthetics. To take an obvious counterexample: according to the Natyasastra, every art contains parts of other arts.[5] It would be almost equally sensible to speculate on Japanese aesthetics and claim that a tradition that emphasizes the values of perishability, suggestion, irregularity, incompleteness, and simplicity[6] is perhaps better suited to approach computer games than its Western counterpart.

2. THE GAMING SITUATION

Jacques Ehrhmann understood games as economy, articulation and communication, and the player as both the subject and the object of the game.[7] The levels of articulation as specified by Warren Motte – the relations of player to game, player to player and game to world[8] – give important clues concerning the elementary differences between games and narratives. To take only one example: in multi-player games the positions of players constantly affect each other. Such an arrangement would be very unusual but not impossible to execute in narrative fiction. The

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way I read The Idiot would then change other people's Idiots or their readers' possibilities to read them and vice versa. That wouldn't make much sense but in games such a practice has always already been in existence. Accordingly, we can distinguish between the static user positions of literature, film, and average drama from the dynamic ones of games and certain installations and performances. We should also mention mobile positions in the wake of mobile gaming and games like the recent "Nokiagame"[9] that contacts the player through multiple channels (text messages, television, the Web, etc.) and demands action.

As we all know, games have other than mere interpretative goals. These goals can be reached by traversing, negotiating, or otherwise overcoming a series of obstacles and gaps. When studying narratives as systems of gaps Meir Sternberg made three heuristic distinctions: gaps are either permanent or temporary, focused or diffused, and either flaunted or suppressed.[10] I think computer games can also be described that way with the all important exception that these gaps are not static and interpretative but ergodic[11] and dynamic: they need action to be encountered, closed, and dealt with. Aarseth's four user functions — interpretative, explorative, configurative, and textonic[12] — are useful in specifying what kind of action is required from the player. In practical terms this means options like finding paths, completing prefabricated relations, or adding new game elements for the other players to struggle with. The resulting typology of 32 possibilities could then be used to map out both qualitative and quantitative differences in the information given to the player in different stages and phases and levels of the game.

Focalization is one of the key elements of the narrative situation in classic narratology. In its most abstract sense it is a channel for narrative information and ultimately based on the assumption of the uneven distribution of knowledge. Focalization is accompanied by the category of distance that regulates the amount (too much or too little) of information distributed through the channel, or two channels (audio and visual) as in film. This is exactly the level where I would like to draw a few parallels between this ludology-in-progress and narratology. One could argue that information is distributed and regulated very differently in games than in narratives as in the former it's also invested in formal rules. In some cases the knowledge of these rules is all that is needed to succeed in the game (in "Tetris" for example). It is important to understand that rules are not conventions One can by all means change conventions while reading a narrative, but one cannot change the rules of the game while playing. The situation is more complex however, since it is common that the player has all the information needed but lacks skills.

In Genette's narratology there are three main categories – narrative level, person, and time of the narrating – that specify the narrator's position or the co-ordinates of narrative acts.[13] Parallels are pretty obvious. It would be only sensible to note the arrangement of levels in a game, and whether or not the player is represented by a character in a game as well as the player's abilities to time the action.

3. Aspects of Time in Computer Games

The dominant temporal relation in (computer) games is the one between user time (the actions of the player) and event time (the happenings of the game), whereas in narratives it is situated between story time (the time of the events told) and discourse time (the time of the telling). The key concept here is the dominant. As we all know, narratives like Stuart Moulthrop's "Hegirascope" and "Reagan Library"[14] can utilize both user and event times for narrative purposes, and games like "The Last Express"[15] can use story and discourse times for gaming purposes. Despite these hybrids the underlying restriction remains the same: there is no narrative without story and discourse times, and no game without user and event times; everything else is optional.

In the course of a game the player encounters temporal phenomena or events with different durations, speeds, orders, and frequencies – and some of these must be manipulated or configured to move from the beginning to the winning situation. Even though game time doesn't have much in common with narrative time, this does not prevent us from observing similar temporal categories in both modes, as order, repetition or speed are not narrative or game-like in themselves.

Traditionally, events are divided into actions and happenings based on their agency, and into kernels and satellites based on their relative importance. There is also a difference between punctual acts and more durational actions.[16] Events can of course be more or less separate or connected and we can borrow the three elementary possibilities of combination from Claude Bremond: embedding, enchaining, and joining.[17] In our case, games can be differentiated from each other on the basis of which events can or cannot be manipulated, which parts and dimensions of events can be manipulated, and for how long and how deeply. An almost ready-made set of temporal relations can be derived from print and film narratologies – this act gives us six categories to study: order, speed, duration, frequency, simultaneity, and the time of action. It is very probable that there exist other noteworthy temporal relations, but I begin with these.

Let me note in passing that the manipulation or completion of multiple relations takes place in time – a kind of general economy of games – but here we are dealing only with the restricted economy of manipulating temporal relations. The importance of mutable temporalities varies from game to game, and there are games that are more dependent on other kinds of variables. For example, turn-based strategy games like "Civilization" seem to

favour causal relations over temporal ones to create event structures that have remarkable similarities to complex board games. We are talking here about quantitative differences: at one extreme there are multiple and highly interdependent chains of events with a complex tactical and strategic calculus, and at the other end looser chains of completed action episodes or stimulus-response cycles with no or minimal cumulative consequences. Taking into account the demands of gameplay (a well-balanced combination of tempo and cognitive tasks) it makes sense that the former types of games utilize intransient time and the latter transient time.

Order

In computer games this is the relation between user events and system events, or the actions of the player and their interaction with the event structure (happenings) of the game. In some cases there is only one sequence of events and the player has to act accordingly in the sense of keeping up with it for as long as is humanly possible. "Tetris" best exemplifies this type of game. In other cases, commonly in exploration games like "Doom," order is a tripartite combination of events, negotiation and progression;[18] in these cases the player must find and test possible event sequences until the right one is found and the game can continue. So you either follow the order or spend your time finding it. In cases where the player can't affect the order of events there's still the difference between variable and invariable sequences of events. In "Tetris" where those objects just keep falling the player can't know in what exact order they'll follow each other. This is also one of the simplest ways to limit or prevent anticipation.

Frequency

This factor concerns the repetitive capacities of the game. Basically, both events and actions (or to be precise the player's chances for taking action) may happen only once or unlimited number of times. There may also be a limit to these recurrences, a kind of a middle ground between those two extremes. In some computer games, especially in role-playing games like "Ultima Online," at least some actions are irreversible and one cannot go back to a previous situation and undo the changes. In other kinds of games this is not the case, and the player can by all means keep banging his head against the wall until there occurs a break somewhere. Sometimes it is even advisable.

Speed

This aspect concerns pace. As we know, one of the great gifts computers brought to gaming is their superb ability to keep pace. To once again borrow a concept or two from Espen Aarseth, we can say that the main difference here is between transient and intransient games. In the former, the computer controls the pace and in the latter the player. On the other hand, this concerns only the agent of speed. There are at least two other relevant dimensions of speed: its steadiness (for some reason the obvious alternative to this is almost always the accelerating and not the decelerating speed), and its importance as a goal in itself.

Duration

This variable contains at least three aspects. Firstly, Richard Schechner distinguishes between event time and set time.[19] In the former case the game is over after all the events are properly traversed, and in the latter there's a temporal limit to all this and the winner is the one who is in the better position when the set time is up. Secondly, temporal limitations can either affect the whole game in its entirety, or only some parts of it that should be traversed within the set time. "The Last Express" is an intriguing combination of these possibilities. In games like "Doom" the players should usually try to reduce the time span or duration allotted to any odd monster. If such an entity is allowed to live its life to the full extent, the game is over. Thirdly, the reverse options may be equally valid depending on the situation – to reduce the duration of an event by cheating or getting out of the situation, or to prolong the duration of an event (letting it happen) by avoiding any confrontation, as in "Thief."

The time of action concerns the player's possibilities to act. Basically, the player can act before, after, during, or in between events. Not all games allow all these possibilities, and not all of these possibilities are equally important in any one game or in any one situation in a game. This is just one aspect of the type or the modality of action. It also corresponds in some degree to the difference between turn-based and real-time strategy games.

Simultaneity

The player may have to increase or decrease the number of simultaneous or parallel events, generate, or initiate such events. A typical example would be "Command and Conquer" and its multiple pieces. Events may have to be alternated, embedded, or linked to each other, or such prefabricated connections and arrangements may have to be reversed and dismantled.

We could easily go into greater detail here by introducing various subdivisions to the temporal categories discussed above; or by taking more rigorously into account temporal requirements (in terms of speed, order, duration etc.) set for the player's possible and necessary actions, and mapping them onto the temporal dimensions of game events. So, after all, there is still much work to be done.

4. Summary

Ludology is not about story and discourse at all but about actions and events, the relations of which are not completely fixed.[20]
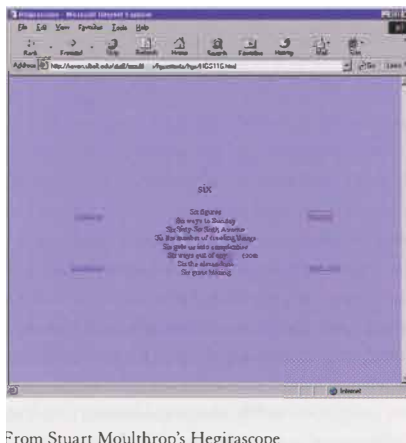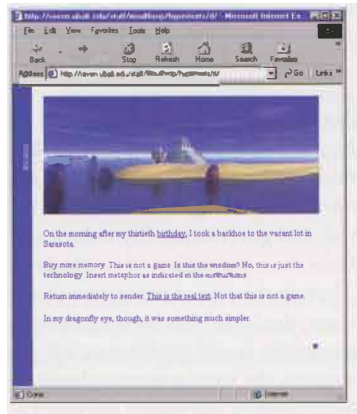
From Stuart Moulthrop's Hegirascope
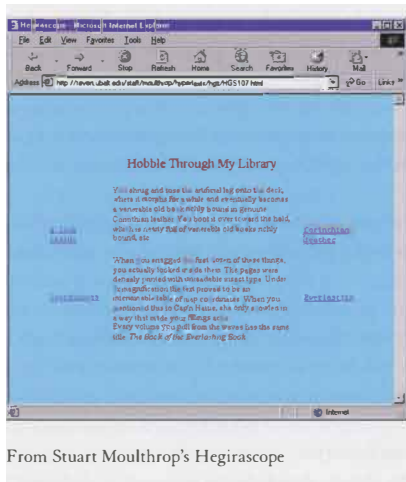
From Stuart Moulthrop's Hegirascope

Notes

1. Caillois, R. (1979 [1958]). *Man, play, games*. Translated by Meyer Barash. New York: Schocken Books; Ehrmann, J. (1969). Homo ludens revisited. In *Yale french studies* 41: 38-57.

2. For instance, Parlett, D. (1999). *The Oxford history of board games*. Oxford and New York: Oxford University Press.

3. Aarseth, E. (1997). *Cybertext perspectives on ergodic literature*. Baltimore: The Johns Hopkins University Press; Aarseth, E. (1998 [1995]). Dataspillets diskurs. In *Espen Aarseth, Digitalkultur og nettverkskommunikasjon*, 75-98. Bergen: Espen Aarseth; Aarseth, E. (1998). Aporia and epiphany in Doom and The Speaking Clock: Temporality in ergodic art. In Marie-Laure Ryan (ed.) *Cyberspace Textuality*, 1-14. Bloomington and Indianapolis: University of Indiana Press; Crawford, C. (1982). The Art of Computer Game Design. URL: www.vancouver.wsu.edu/fac/peabody/game-book/Coverpage.html; Frasca, G. (1998). Ludology meets narratology. URL: www.jacaranda.org/frasca/ludology.html; Juul, J. (2000). What computer games can and can't do. Paper presented at the Digital Arts and Culture conference in Bergen.

4. Chatman, S. (1978). *Story and discourse*. Ithaca: Cornell University Press; Chatman, S. (1990). *Coming to terms*. Ithaca: Cornell University Press; Genette, G. (1980 [1972]). *Narrative discourse*. Ithaca: Cornell University Press; Genette, G. (1988 [1983]). *Narrative discourse revisited*. Ithaca: Cornell University Press; Prince, G. (1981). *Narratology*. Berlin: Walter de Gruyter; Prince, G. (1987). *The Dictionary of Narratology*. Lincoln and London: University of Nebraska Press.

5. Vatsyayan, K. (1996). *Bharata: The Natyasastra*. Delhi: Sahitya Akademi.

6. Keene, D. (1995). Japanese aesthetics. In Nancy G. Hume (ed.) *Japanese aesthetics and culture*, 27-41. Albany: State University of New York.

7. Ehrmann, J. (1969). Homo ludens revisited. In *Yale French studies* 41: 55-57.

8. Motte, W. (1995). *Playtexts*. Lincoln & London: University of Nebraska Press, 25.

9. "Nokia Game" (www.nokiagame.com) is interesting in how it makes use of the immediate media environment of the player as the following excerpt from its rules makes clear: "The player must complete various kind of challenges and puzzles based on the given clues in order to proceed to the next stage of "Nokia Game." A time period for completing a task in question may be limited for some tasks (e.g. for couple of hours or the clue might be given at an exact time). This time limit will be notified to the player with the task or clue in question. The player may find the clues via received short messages to his or her mobile phone or via other various kinds of media, such as Internet, TV, radio, magazines or newspapers. At most stages of "Nokia Game" the player has only one chance to complete the task in question. At each stage part of the players will be excluded from "Nokia Game" based on a wrong answer or action, or not being among the announced number of best players that has performed the task in question." The game continues for a month (for the winner and a little less for others).

10. Sternberg, M. (1978). *Expositional modes and temporal ordering in fiction*. Baltimore: Johns Hopkins University Press.

11. Aarseth, E. (1997). *Cybertext perspectives on ergodic literature*. Baltimore: The Johns Hopkins University Press, 1.

From Stuart Moulthrop's Reagan Library

12. Aarseth, E. (1997). *Cybertext perspectives on ergodic literature*. Baltimore: The Johns Hopkins University Press, 60-62.
13. Genette, G. (1980 [1972]). *Narrative discourse*. Ithaca: Cornell University Press, 215.
14. "Hegiracope," a web fiction by Stuart Moulthrop, limits the reaction time of its readers to 30 seconds per node. Within that period of time the reader must decide which narrative thread to follow and choose a link; otherwise the program makes that decision for the player. In "Reagan Library," also by Moulthrop, the content of the nodes change when they are revisited for the first three times (there is more text available for the persistent reader). This affects or at least has the capacity to affect and alter the temporal relations between story time and discourse time. See Moulthrop, S. (1995). Hegirascope. URL: raven.ubalt.edu/staff/Moulthrop/HGS; Moulthrop, S. (1999).Reagan Library. URL: raven.ubalt.edu/staff/Moulthrop/rl.
15. "The Last Express" (CD-ROM, Broderbund 1997, see also http://www.lastexpress.com) is an adventure game (a murder mystery) happening in the real-time of the game world. The player must find the culprit in time, that is, he may run out of time to solve the crime, as there's a temporal limit to the duration of the exploration. In other words the wasted time also counts, and the player has to manipulate discourse time and condense it to contain the relevant story events.
16. Chatman, S. (1978). *Story and discourse*. Ithaca: Cornell University Press, 32-56.
17. Bremond, C. (1980). The logic of narrative possibilities. New Literary History 11:398-411.
18. Aarseth, E. (1998). Aporia and epiphany in Doom and The Speaking Clock: Temporality in ergodic art, 9.
19. Schechner, R. (1988). *Performance theory*. London: Routledge, 6-7.
20. Here's a preliminary example of how to apply some of the key concepts utilized in this paper to "Tetris," probably the most successful abstract computer game ever.

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	story time < narratives > discourse time/event time < games > user time
order	X (random)
speed	X (accelerating)
frequency (repetition)	0
duration	0
simultaneity	X (no simultaneity)
time of narration/action	X (during and after)

Explanation: dotted line = non-existent relation, X= non-manipulatable relation, 0 = manipulatable relation. Discourse time in narratology is somewhat similar to event time in ludology. The former could be seen as a series or a combination of individual event times, either fixed (or semi-fixed) as in print or hypertext narratives or variable as in games. Still, as differences in the time needed to complete a game usually vary considerably from player to player I prefer event time to discourse time. One should also note that in computer games there's always a conceptual difference between events as they exist in the game and as they are presented to or generated for the player (very much like textons and scriptons in cybertext theory, see Aarseth 1997, 62).