Summary: The article discusses the future role of narrative computer games in the academic canon. As a popular part of everyday culture, this medium is coming to the attention of several disciplines at the same time. Especially comparative literature studies has to face the question of how to deal with computer games, whether to ignore them, to treat them marginally, or to even incorporate them. This article outlines the major challenges as well as the possible benefits of their inclusion into the systematical and theoretical scope of comparative literature.

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Narratological interplay

What literary criticism can learn from computer gaming studies

Treating computer games as narrative may seem farfetched to many scholars, and to discuss it as a part of comparative literature studies has not yet been a matter of discussion. At the same time, a quickly growing international field of research has been established under the name of "narrative gaming studies" as an interdisciplinary crossover of culture studies, media studies, and literature studies. Without drawing much outside attention, a number of scholars from this field have succinctly proven that computer games are a medium with pronounced narrative properties (cf. Backe 2008, 94–141). The ways in which stories are related in computer games bear many similarities to traditional media, yet they are not 'narratives' in the strict sense of the word – first and foremost because the semantic field "narration" implies the use of written and spoken language, which are only of secondary importance in games.

As digital media have become a serious cultural factor in recent years, the humanities have taken increased interest in them. The 2008 congress of German comparative literature association DGAVL – where an earlier version of this paper was presented - and the 2010 ICLA world congress have expressly formulated the need for addressing the changed media environment. The implicit question is one of old versus new: Do the established academic disciplines have to change, and if they do, what kind of change will it be? Will they become more conservative and re-focus on their core interests, or will they expand and include new media?

This article is meant to contribute to that emerging debate by giving a cursory overview of the most important narrative properties of computer games. It is not meant to give any new impulses to narrative gaming studies, but to present a summary of issues that are pertinent to the discussion of computer games in the scope of comparative literature studies. By demonstrating how computer games convey stories by means of interactive, multi-media simulations, I want to give an impression of the ways in which they expand on concepts developed in general narrative theory. At the same time, I want to pose the question whether computer games should be included in the curriculum of comparative literature studies, or if they would be better suited for forming the core of a new discipline, a science of entertainment arts we might call 'entertainology.'

Paradigm shifts

If classifying computer games as narrative is problematic, calling them literature would be pointless. Still, comparative literature studies has changed its focus and adopted new paradigms so many times that change has almost become a constant (cf. Hart 1992, 1). It is for this reason that we should at least consider the possibility of integrating computer games into our curriculum. How quickly we have adopted new ideas in the past is easily shown. Let me do so by subsuming three papers from the last twenty years that discussed perceived or expected paradigm shifts.

In 1992, Jonathan Hart identified a paradigm shift towards a political dimension as the most recent development in literature studies. The emerging ubiquity of post-colonial and gender oriented inquiries into literature were, in Harts opinion, a massive expansion of the comparatist field of interest (cf. Hart 1992, 2–3). Neither approach was radically new at the time Hart described them, but for that very reason, he could easily plead for their inclusion into the research canon of his discipline. Less than ten years later, the proceedings to a German colloquium were published, containing exclusively attempts at re-defining general literature studies. The bulk of contributions resembled Hart's in that they discussed the canonization of new topics or innovative approaches. Two articles took a different approach by ruminating the challenges involved in the crossing of media borders. Volker Roloff described the new paradigm of intermediality (cf. Roloff 1999, 115), while Peter Gendolla discussed the influence of 'New Media' on comparative literature (Gendolla 1999, 128). Both authors stressed that literature must not be treated as if it was isolated from other media. Rather, the creation and reception of literature was described as taking place in a cultural melting pot that juxtaposes, mingles, or fuses different media. Although they addressed the need for interdisciplinarity, they insisted on two things: First, that literature remained the undisputed center of the discipline, and second, that intermediality was to stress similarities, not differences, between media. Roloff expected that this would produce general media theories which might expand and augment the traditional repertoire of terms and methods in literature studies. As for individual studies dealing with literature and other media, he felt that they should always remain on the level of content, because dealing with the specific properties of, e.g., fiction film would have to remain the domain of dedicated disciplines like film studies. Inter-medial comparatist studies as Roloff imagined them would have their strength at outlining traditions common to whole cultures, e.g. Jean-Luc Godard's treatment of Homer's epics (Roloff 1999, 125–26). Peter Gendolla's inquiry into the influence of 'New Media' on literature is of a similarly limited focus. The possibility of storing and processing literature electronically was, to him, something that would influence how literature would be produced and analyzed. His main interest lay not with new types of literature, but with the use of computers for editing and collecting texts that had already appeared in print (cf. Gendolla 1999, 136–38).

These late twentieth century visions have obviously been realized. Post-colonial studies, cross-media-studies, and electronic databases are established elements of the comparatist repertoire. Yet the subject's core has been impervious to these developments: The central role of literature to narrative studies in general, its privileged position as the pinnacle of storytelling, has never been questioned. The dominant status of the literary paradigm is also apparent in the absence of any alternatives to the term "narrative," which has time and again proven a major problem in

dealing with other media. The seemingly endless debate about the existence of a narrator in fiction film is probably the most famous example for this issue.[1]

With the immense success of computer games in recent years,[2] digital narrative has emerged as a mainstream phenomenon. It is a new narrative medium, and although fundamentally different from literature, it still bears enough similarities to inspire interest with comparatists – not in the least because the vast differences challenge our understanding of storytelling.

Narrative in electronic media has been studied mostly by analyzing hypertext literature, a rather simple form of digital art from a technical point of view. Yet it is precisely because hypertext literature does not exhaust all the possibilities for innovation inherent in digital media that is has made a good starting point for an exploration of interactive storytelling. Hypertexts bear significant similarities to traditional texts, which enables scholars of literature to analyze their possibilities – e. g. combinatory, aleatory, and collaborative writing. The most significant overlap is the common medium of written text, which, in both, is the means of communication between author, reader, and scholar. Reader interaction, the most 'revolutionary' property of hypertexts, is limited to choosing between alternatives, which are, in themselves, nothing but passages of written text. Therefore, these snippets can be analyzed – in isolation as well as in their possible combinations – by using established methods of literature studies.[3]

Computer games, on the other hand, have long ceased to be mainly text-based. As an audio-visual medium, they offer a different kind of interactivity – more on that later – and autonomous aesthetics that force us to reconsider our narrative theories. Early on, it appeared as if it was possible to simply borrow elements from literature and film studies, because computer games looked as if they were texts or movies. Yet the use of moving images and sound in computer games is largely independent from seemingly similar media, as is easily shown by a cursory comparison with fiction film. Pictures and sounds within a computer game are not just a means of aesthetic communication, but part of a graphical user interface, comparable to those in text processors or internet browsers. What their users see and hear has been designed according to a unified aesthetic concept and is a complex semiotic construct. Yet the function of these signs is mainly to enable the user to make meaningful input – everything else is a bonus.

For this reason, the most important features of visual design in film – editing and an aesthetically motivated camera placement – are seldom used in computer games. In most cases, using them would be detrimental to the lucidity of the interface situation.[4] It would therefore be ill

[1] For a summary of the debate, see (Hausken 2004, 394–95).

[2] Sales figures are quite telling in this respect. In 2007, the sales of gaming related hardware and software amounted to almost $ 18 Billion – almost twice as much as the combined revenue of cinema and music industry (Bangemann 2008). The German association of booksellers estimates that their revenue for the same year has been around € 9 Billion (Börsenverein 2008).

[3] The most widely analyzed primary hypertext is probably Michael Joyce's *Afternoon, a story* (Joyce 1990). A recent example for the comparatist preference for speech-based forms of hypertexts is (Engel 2006), which gives a very precise and thorough analysis of the MUD (Multi-User Dungeon), a text-based form of computer game which has been obsolete for almost a decade.

[4] Narrative computer games make frequent use of film as an expository medium, which will be addressed later on. That the nature of such film clips in games is perceived as inherently different from their ludic surroundings becomes apparent in the technical term for them, which is 'cut-scenes.' The very property of being edited

advised to discuss the visuals of computer games in terms of film studies. They do not employ a traditional *mise-en-scene*, but a highly utilitarist mix of (to use film terminology) art direction and set design called level design. When the player can move the avatar[5] freely through a three-dimensional world, the authors cannot lay out the frame composition of the image present on screen, but only the space in which the avatar is positioned.

That these differences were initially not perceived by scholars stems from their concentration on the genre of adventure games. As an offspring of hypertexts, this genre has rather obvious narrative elements and has for a long time been conservative in its integration of new technologies. Adventure games do, for the greater part, forego real-time action in favor of a more deliberate pace, which has sometimes led to an adoption of quasi-cinematic visuals. With the predominance of real-time rendered, three-dimensional worlds as gaming environments we witness today, the need for a clear interface structure has become apparent. It is this type of games that I will be concerned with in the following.

There are yet more profound challenges in understanding narrative computer games when one moves from the surface level to that of structure. Games are no texts, no matter how far this term is stretched. One of the essential properties of texts is the organization of elements in an unchanging structure, which is about the exact opposite of what happens in any kind of game. Narrative computer games actually do make use of textual passages, yet these are isolated elements in a body of barely structured playful activity. Among other things, the real-time nature of playing causes mode of perception which differs from that of traditional narratives. Recipients of books or movies perceive a structured presentation of events, chosen from a series of occurrences and arranged in a specific order. Everything that is perceived has already happened. In a computer game's virtual world, the player is actively involved in the occurrences themselves. The occurrences are perceived as they are taking place. There is a script and thus a macro-structure, but only the major plot points are defined. In between them, an individual story is constructed each time the game is played. The differences might be minuscule, but the electronic storytelling process with its combination of user interaction, simulation, and database operations often produces occurrences that are not authored, but emerge out of the act of playing. And while hypertexts allow only for conscious choices between alternatives as a means of interaction, games can register the player's actions and reactions to any situation. The data thus collected can be used to decide upon the way in which the story develops, without the user even noticing that a decision has been made.

I will now sketch these constitutive factors – interaction, simulation, database operation, and emergence – and give a short overview of the possibilities and challenges for quoting, describing and analyzing media that use them.

Simulation media

First of all, there is the question of how computer games can communicate if they are no texts. The answer lies with the aforementioned interactive nature of all games. Playing means – at least in the

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together, of including changes in perspective, focal length, and frame composition, is singled out as the differentiating aspect of film clips in computer games.

[5] The term 'avatar' is used to designate the player's representation in the simulated world, the virtual character that is controlled by his or her playing.

ludic dimension of games as outlined by Roger Caillois – to freely interact within a set of given rules. The aim of this interaction can be to beat an opponent, to achieve a specific goal or score, or to play merely for fun or self-improvement (cf. Caillois 1958, 52–66).

The basic difference between computer games and their traditional counterparts is that they take place in a virtual environment. A second difference is that the majority of computer games is played by a single player against the computer, thus making the computer at the same time opponent and playing field. As such, computer games are complex simulation processes. The game's author develops an environment and rules for possible actions within it, and the player's reactions to the game's stimuli result in a feedback loop which only ends when a goal is reached. This is the most crucial, yet most frequently overlooked difference between computer games and other media: Their virtual worlds are not represented but simulated, including the objects within these worlds, their properties, and the governing laws of physics.

Seen as such, truly interactive electronic media appear to be a distinct form of non-representational communication. Traditional media represent objects and processes, be they real or imaginary – they have either been in existence, or someone has imagined them, and then something has happened to them. Computer games do not represent objects, their behavior, and the outcome of their manipulation, but simulates them. This distinction with all the ensuing limitations and possibilities of both forms of communication is easily demonstrated with a simple example. The photograph of an airplane is the representation of that airplane, a simple paper airplane its simulation. No matter how detailed the picture is, it can only hint at the process of flying, while even the most primitive of simulations can recreate this ability of the simulated object, its property of being able to fly (cf. Backe 2008, 281–315).[6]

Computer games are atypical of simulations as they communicate more than just the results of their calculations. The amalgamating of simulation and narration is only possible by the inclusion of some textual elements, that is, a mix of representation and simulation elements. Without any textually organized representation, narrative coherence would be impossible to achieve. This is especially true for the exposition of a world, its characters, and previous occurrences. In accordance with Aristotle's minimum requirements for stories as things that have a beginning, a middle and an ending (Poetics, Ch. 7), there usually is a narrative frame – a textual beginning and one (or several) endings – to contextualize the simulation. These are the story's core elements, forming a narrative scaffold, which affords the incorporated simulation elements a great amount of flexibility within a narrative macro-structure.

How much the player can influence the story's development within the simulation obviously varies between individual examples, and there have been few games to exploit all the given possibilities.[7] Most of these possibilities can be attributed to the fact that simulation media are, as

[6] There is, of course, room for a third form in-between these extremes, namely media that rather present than re-present something. Chief among these are performing arts such as theater and music, in which a script (a play or sheet music) is only the textual basis for performances. Each performance necessarily differs slightly from all others, so that the final artistic 'product' will never be the same twice.

[7] One example of a computer game that uses most possibilities is *S.T.A.L.K.E.R.: Shadow of Chernobyl* (GSC Gameworld/THQ, 2007), which features seven different endings among which the game choses based on a mix of decision making and player conduct.

Janet Murray has pointed out quite a while ago, database driven and therefore encyclopedic in their opportunities for developing the action (Murray 1997, 71–73). In a given situation, different reactions can trigger specific, alternative chains of events. This is primarily a basic characteristic of games, but it is often used in narrative contexts. One very interesting possibility is the characterization of protagonists through their deeds, which in games are not necessarily determined by the author, but by the player.

This does not make the player the author of the story he experiences. He or she is still bound to a number of paths which the authors have arranged within the narrative framework. This is inevitable, because for all decisions and actions that have a major bearing on the story's progress, the simulation's authors have to plot out alternatives and enter them into a comprehensive database. This may seem like an awkward and overly technical process, yet it affords storytelling in simulations some special capabilities. Not only can multiple if-then-relationships be linked and non-decision events (like actions or special achievements) be used to determine a result, but the underlying database structure is not read-only. Every aspect of the player's actions within the simulation can be stored. This means in effect that anything – the player's reaction to a given situation, the degree of success in solving a problem, or even a special item the avatar is carrying – can be stored for later reference. Although the foundation for user interaction is the same as that of hypertext literature – a decision-tree structure with simple, mostly binary oppositions – the increased amount of variables gives the player a greater amount of freedom. This is best illustrated with role-playing games, where the player's decision for the avatar's gender can influence the outcome of many situations and thus determine the story's development as much as conscious choices between alternatives.

Moreover, simulations can produce emergent behavior. Due to the complexity of the underlying database, actions and situations can influence one another without being explicitly correlated by the author. As of yet, this form of emergence has seldom been productive; in most cases, it becomes manifest in errors due to conflicting instructions.[8] More successful in this respect is emergent behavior that results from creative applications of the simulated world's laws of physics. There are many cases in which user experiments have opened up additional solutions to problems, thus creating emergent ways to reach goals.[9] Even though emergence has not yet played a significant role in narrative simulations – because the narrative is always thrown back onto the narrative macro-structure designed by the simulation authors –, it holds promise as a potentially powerful storytelling device for the future.

Conclusions

All the properties of simulation media I have outlined here pose a number of problems for scholars. Most prominently among these is the question of how to quote simulations. Their use of multiple electronic media already makes their reproduction in print highly problematic, for the same reasons that are encountered in quoting films: Reducing a sequence of moving pictures to a single frame,

[8] A basic typology of emergent behavior in computer games can be found in (Juul 2002).

[9] One famous example is the 'wall mine exploit' in *Deus Ex* (Ion Storm/Eidos 2000). Creative players discovered that the game's wall-mounted mines could be 'misused' by setting up the device, having the avatar climb it, and defuse it before it exploded, thus making it possible to scale sheer walls.

without sound and often in black and white, significantly subtracts from the amount of information contained in the original medium and fails to accurately reproduce the source's aesthetics. With simulations, there is the additional problem that the user's actions have a considerable influence on what is visible and audible.

As computer games only produce images and sounds in response to user actions, the media output that can be perceived and recorded has a completely different status than that of a novel's text or a film clip. The recording of a game's picture and sound does not uncover the game's 'text', a basis for understanding and interpretation that would be the same for each recipient, but a simulated world's responses to a specific user's inputs. What can be 'quoted' by such a recording is already an individual experience, and not – as with quoting from other media – the basis for one.

Walter Benjamin's concept of 'aura' gets thus infused with new meaning by simulations. The immediacy of the 'right here and now' and the incongruity of physical proximity and spiritual distance he describes (Benjamin 1980, 471) are complemented by the actual impossibility of reproduction. With the live recording of a concert, one may argue about the amount of 'aura' present in the mechanically reproduced tape or disk. The recording of the output generated by someone playing a game is fundamentally different from the act of playing itself. The recording of a game – be it a game show or a sports event – is an individual medium, being, obviously, a representation, not a simulation (cf. Hickethier 2003, 126).

All these (mostly technological) differences between the narrative simulations of computer games and the representational narratives of literature do in themselves not answer the question of why the new medium should be of interest for comparatists. But from what has been outlined here, three simple reasons can be derived:

The first reason is the same that has led us to become involved with a great number of other media: The very alterity of narrative in a non-textual, non-representational medium may improve our understanding of the properties of literary narrative. The second reason is scholarly curiosity, which drives us to often search for answers in off-beat, marginal examples. Computer games may in this tradition be perceived as a kind of *avant-garde*, forming the border of the realm of narrativity. The third reason is the possibility of a deeper understanding of general aesthetics. If we achieve an understanding of a medium that questions most of our concepts of authorship, reception, and interpretation, if we can grasp this art form's distinct aesthetics, our understanding of other media will necessarily benefit as well. One method of applying results from computer game research to other media might consist in correlating them with established general art theories, such as Harald Fricke's concept of "Art as Deviation" (cf. Fricke 1981). The new medium can be used as an additional example to fill gaps – there are usually phenomena that should exist according to a theory, but did not as of the time of its conception. It may as well be used to verify or falsify aspects of a theory and thus enable authors to expand or modify their original concepts and to formulate new typologies. The effect would be a feedback loop, in which the very theories that allowed for an understanding of computer games benefit from this process. To give an example from my own experience, a reading of Roger Caillois' theory of games tremendously benefits from a thorough knowledge of computer games. Most of its notorious idiosyncrasies can be resolved by expanding its scope to include digital games and revise its basic assumptions accordingly (cf. Backe 2008, 258–271).

In essence, this short survey of the central differences of interactive and traditional forms of narrative goes to show that there might be a necessity to discuss the *tertium comparationis* of comparative literature studies itself. What do the things we analyze have in common? Is it their shared quality that they are art, aesthetics, narrative, or something different? The question if stories that are not narrated but experienced can be part of our subject is of the utmost importance in this context. Some time in the future, we will have to decide whether we want to narrow down our curriculum by concentrating on literature in the proper sense of the word, or if we want to expand it by including all cultural products that do contain stories. But then, another question arises: would that still be "Comparative Literature", or would that discipline not have to be called "Entertainology?"

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