I. Introduction

This is it. This is your story. It all begins here...

Auron (*FINAL FANTASY X*)

Compared to film and especially to books, computer games are a very young medium. The first computer game *SPACEWAR!* dates from 1962. It was programmed to run on a DEC PDP-1[1]. As these computers were quite costly[2], it was not until the commercial breakthrough of the integrated circuit (IC) at the beginning of the 1970s that commercial computer games became a viable option[3]. At first, they could only be found in Arcade halls, but by the early 1980s they had also found their way into our homes. Nowadays, of course, we cannot imagine a world without computer games, a fact that made Nicholson Baker recently write: "I'd never held a video-game controller until last fall. Which is a pretty sad admission, as if I'd said in 1966 that I'd never watched 'Bonanza' or heard a song by the Rolling Stones" (2010, p. 53).

Between the early 1980s and today, computer games have come a long way. If we look back at game history we can see that the original two categories of computer games — i.e. visual action based games that stem from *SPACEWAR!,* and maze-like story games that started with the 1975-76 game *THE COLOSSAL CAVE ADVENTURE* — grew into a multitude of games and game genres. In the beginning the maze-like story games seemed to remediate literature (as interactive fiction or electronic novels), particularly since they only consisted of text. When graphics were added (especially full motion video), their descendants were seen as a remediation of film (interactive cinema)[4]. But although these games were advertised as such (in particular the first text-based games), and although both early Arts based game researchers such as Janet Murray and the industry itself believed in games as the ultimate way to remediate literary or cinematic narratives[5], even

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[1] These computers were generally referred to as mini computers as they were considerably smaller (≈ big American fridge) compared to the more usual mainframe computers (which filled complete halls). Like mainframe computers, mini computers were multi-user computers (but now owned by a single department or research group), on which computer time was divided amongst the users logged in and the processes that were already running. Personal computers did not exist at the time.

[2] At the time, a basic mini computer cost about $120,000. A setup including tape storage, a card reader, a display screen, a keyboard and a line printer could easily cost half a million dollars. The PDP-1 *SPACEWAR!* was written on was donated to MIT by DEC.

[3] The first successful demonstration of a working integrated circuit was on 12 September 1958 by Jack Kilby. But it was not until the early 1970s that the first calculator chips, ram chips, and microprocessors were manufactured.

[4] Which, according to Bolter and Grusin, tried "to absorb the older medium entirely" (2000, p. 47).

[5] Murray's signature book was after all called *Hamlet on the Holodeck: the Future of Narrative in Cyberspace* (1997).

at that time the way these games 'told' their stories was quite different from the way books and films do. And in the years that followed, this (visual) narrative grammar of the story-structured games became ever more sophisticated.

But, as game studies was not yet a separate academic field, narrative games became the domain of literary and film theory and the benchmark became the diegetic world of the written or filmed narrative, which the computer game, allegedly, only repurposed. As I hope to show in this dissertation, even though computer games may use a similar overall story structure as do other narrative media, the way games 'tell' stories is different, even if the game centres on, or is structured by, a borrowed or adapted story from another medium. It has to be, not only because, as we will see, visualizing a story in a game is heavily dependent on the available hardware, but also because games are about agency, about a gamer who makes her own decisions, consequently shaping the sequence of events and, in the truly great story-structured games, also the outcome. Narrative computer games therefore are not about repurposing what is already there. They are about new ways of 'telling' stories. Or as Steven Holtzmam put it more generally:

> In the end, no matter how enjoyable, comfortable, or well accepted they are, these approaches [repurposing] borrow from existing paradigms. They weren't conceived with digital media in mind, and as a result they don't exploit the special qualities that are unique to digital worlds. Yet it's those unique qualities that will ultimately define entirely new languages of expression. And it's those languages that will tap the potential digital media as *new* [italics in the original] vehicles of expression. (1997, p. 15)

Terminology

Before I go on, I would like to discuss the terminology I will be using in this dissertation, to avoid early misinterpretations. At variance with the prevailing trend to talk about videogames (or video games), I will use the term computer games, which in my opinion is more appropriate. The term videogame is based on early works on game history that mainly focused on games which were played on game consoles or arcade cabinets i.e. games that used graphics and consequently some form of (video)screen[6] from the start[7]. The games I will be discussing in this dissertation, however, the descendants of the *THE COLOSSAL CAVE ADVENTURE,* started life as printed text[8] and even today these games do not

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[6] Most commonly television sets.

[7] Strictly speaking, computer game is the British term and video game the American term, but in these early works on computer games the term computer game was usually exclusively used for PC games, while video game referred to arcade and console games. For some, like game designer Chris Crawford, this distinction still holds true.

[8] At the time, computer terminals were very expensive so it was not unusual to only have a printer or telex-like device for output.

necessarily need a video screen to play them. Furthermore, as Marie-Laure Ryan wrote, "The only feature that objectively and absolutely defines video games is their dependency on the computer as material support" (Ryan, 2006, p. 181). This is indeed true for all kinds of computer games, which is why I prefer this term[9]. Still, as the term computer games, strictly speaking, would also include games that use a computer chip such as the board game King Arthur (2003), I will define a computer game as:

> an interactive digital game involving text or images (or both) which is played on any type of platform[10] for diversion or amusement or for educational or training purposes. A computer game is rule-based or story-structured and usually involves challenges and scoring or other means of progress management. Computer games necessitate non-trivial effort on part of the gamer. Consequently, progressing in a computer game gives the gamer a sense of achievement. To play a computer game one has to have certain skills, which are genre dependent[11].

This definition also includes so-called serious games i.e. games developed for educational or training purposes, although I will not discuss these in this dissertation. The definition excludes MOOs[12] and virtual worlds (e.g. *Second Life*), as these are not games (they are not rule-based nor story-structured) but a form of social network. The word interactive in the definition could be seen as superfluous, as Manovich already observed that "to call computer media 'interactive' is meaningless. — it simply means stating the most basic fact about computers" (Manovich, 2001, p. 55). But as it is quite easy to conceive of a game where computers play against each other (or where a computer plays itself in order to test an algorithm or a process or to learn through experience[13]), I will keep the term to indicate that these games should involve at least one human gamer. The actual playing of the game, the dynamic interactive aspect of computer games, is commonly called gameplay[14].

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[9] Digital game would also be appropriate, but it is less commonly used than computer game.

[10] Currently PC, console, handheld, mobile and (more common in Japan) arcade cabinet.

[11] Note that almost every study on computer games has its own definition of the term computer game (many of which can be found in the bibliography). Those defined by (former) ludologists (see below) will take general game theory or the classic game model as their point of departure, for example Juul (2005), while (former) narratologists define games more as a form of fiction, for example Murray (1997). Game designers such as Crawford (1982 and 2003) and Salen and Zimmerman (2004) define computer games in terms of other types of (non computer) games. In short, the definition of computer game very much depends on the background of the designer or researcher. I have tried to define computer game as neutrally and as all encompassing as possible, for instance not using the term agency, as this term applies more to the gamer's actions in story-structured games (making it more restrictive), preferring the description 'non-trivial effort'.

[12] MOOs are Multi-user Object Oriented domains. They derive from and are the social variant of MUDs i.e. Multi User Dungeons, the first multi-user role-playing games. See Chapter III for further information on MUDs.

[13] The scenario of the film WARGAMES (1983), where a computer plays both sides in the game of tic-tac-toe and similar games in order to learn that some games cannot be won 'logically' may seem far fetched, but machine learning has been central to artificial intelligence from the beginning. Especially in artificial neural networks computers learn to learn inductively, basing new decisions on previous experience.

[14] For a more detailed discussion of gameplay, see Chapters II and IV.

I also prefer the term gamer over player, as play, and hence player[15], according to the theory of play and ludology[16], involves all types of play including animal behaviour and horsing around on a playground. A game distinguishes itself from play in that it involves rules. This still includes more formalized playground games such as ring a ring o' rose, sports games, board games, etcetera, but as those who participate in these games are usually called players (e.g. an NBA player, a soccer player), using the term gamer for someone who plays a computer game automatically excludes those kinds of games[17]. The use of the term gamer is also historically more correct as the term previously was used to indicate someone who played a wargame or a role-playing game, both precursors[18] of the story-structured games I will be focussing on in this dissertation. Contrary to the popular interpretation of the term gamer, I will not use it solely to indicate those who spend quite some time playing games, but instead use it as a more general term for anyone playing computer games at any level[19].

What are story-structured games? I use this term to refer to games that have a 'built-in' story which unfolds with the gamer's actions. As I will show in the next chapter, not all games 'tell' a story, while some do not even have a theme or specific setting. So I do not agree with Murray when she writes that "Games are always stories, even abstract games such as checkers or *Tetris*, which are about winning and loosing, casting the player as the opponent-battling or environment-battling hero" (2004, p. 2). But I also do not agree with Ryan, who states that "For a game to convey a story, then, it must either simulate practical actions or simulate other games that themselves simulate this type of action" (2006, p. 195), as this definition also includes games like *MICROSOFT FLIGHT SIMULATOR* (1982-present) and *THE SIMS* (2000-present), which are games that have no 'built-in' stories, just emergent[20] ones. Consequently my definition of narrative is not the

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[15] Of course this distinction can only be made in languages that have two separate terms for the verb play and the noun game and hence player and gamer. In Dutch, German and French, e.g. the same term is used for both: (Dutch) spelen (verb) / spel (noun) / speler (both player and gamer); (German) spielen (verb) / Spiel (noun) / Spieler (player/gamer); and (French) jouer (verb) / jeu (noun) / joueur (player/gamer).

[16] Today the term ludology is almost always equated with the study of computer games, which is not exactly correct as we will see. Strictly speaking it is the study of play (ludo = play; while ludus = game). In game studies the term derives from Johan Huizinga's book *Homo Ludens, a study of the play element in culture* (1950). Note that according to Huizinga himself the subtitle should be *a study of the play element of culture*; it was changed by the anonymous translator of the English version who felt that in the English language *in* was more correct than *of*.

[17] See Salen and Zimmerman (2004) for a more elaborate discussion of the difference between play and game.

[18] See Chapter III.

[19] I.e. including all categories derived from the term: casual gamer, hardcore gamer, pro gamer, girl gamer, retro gamer, etcetera. Data on game demographics also use the term gamer in this less restrictive way.

[20] "Emergent narratives are not pre-structured or pre-programmed, taking shape through the game play, yet they are not as unstructured, chaotic, and frustrating as life itself" (Jenkins H. , 2004, p. 128). The term refers to the gamer's experience of playing a game, or the stories that a gamer tells about a game or the stories that a gamer creates inside a game. This, of course, can ultimately be said of any type of game. *GO*

broad one by film theorist David Bordwell that Ryan uses: "for Bordwell, narration occurs when signs are arranged in such a way as to inspire the mental construction of a story" (2006, p. 185), but Ryan's own more restrictive one: "a narrative text is one that brings a world to mind (setting) and populates it with intelligent agents (characters). These agents participate in actions and happenings (event, plot), which cause global changes in the narrative world" (2004, p. 337)[21].

Returning to the original two categories of games — those that stem from *SPACEWAR!* (1962) and those that derive from *THE COLOSSAL CAVE ADVENTURE* (1975-76)) — only the latter category[22] includes games that are story-structured. Jesper Juul refers to this group as games of progression, which he defines as follows: "In progression games, the player has to perform a predefined set of actions in order to complete the game" (2005, p. 5). The set is predefined because in games of progression the designer has the upper hand, determining what actions the gamer has to perform, what choices she can make and how the game state changes in consequence. In this way, the designer also determines how the game story unfolds. The other category of games, those that derive from *SPACEWAR!*, Juul dubbed games of emergence, as the gameplay of these games "emerges" from "a small number of rules that combine and yield large numbers of game variations for which the player must design strategies to handle" (ibid.). Thus games of emergence "set up challenges indirectly because the rules of the game interact" (ibid., p. 67) i.e. gameplay emerges based on a finite set of underlying rules; while games of progression, on the other hand, "directly set up each consecutive challenge in [the] game" (ibid.) i.e. the game script determines what happens next. As the most clear-cut examples of progression games Juul names the traditional or classic adventure games[23], followed by the single-player action and stealth (adventure) games. Pure games of emergence are multi-player board, card, action and strategy games, followed by multi-player role-playing games and single player strategy games. To determine whether a game is a progressive game or an

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[21] and *CHESS* were originally wargames, just as the predecessors of the adventure games I will discuss in Chapter III. Knowing about their history one can easily construct a story about a pupil in the art of war who is being taught strategy by her opponent, cast as the wizened, battle weary, mentally superior general. As it can be argued that all games ultimately can effectuate emergent narratives, Murray and others could claim that all games are stories.

[21] Digital storytelling, certain types of computer games included, has, in recent years, caused much debate on what the terms narrative and story entail. It is clear that the structuralists' distinction of narrative as story and discourse is very hard to maintain, especially for computer games, and that both terms (narrative and story) should be redefined. On what the new definitions should be the jury is still out. For a thorough discussion of the problem see Ryan (2006). I will return to this problem in Chapter VII.

[22] Which Espen Aarseth (1997) called *Ergodic literature,* i.e. a semiotic sequence that may differ from reading to reading, where the reader has to apply more than trivial effort for each reading.

[23] I will discuss the specific game categories in the next chapter.

emergent game Juul devised what he calls "The game guide test of progression and emergence":

> Search for a guide to the game on the Internet. If the game guide is a walkthrough (describing step by step what to do), it is a game of progression. If the game guide is a strategy guide (describing rules of thumb for how to play), it is a game of emergence. (ibid., p. 71)

Although Juul does not explicitly mention simulation games, such as the above mentioned MICROSOFT FLIGHT SIMULATOR and THE SIMS, these games are also examples of games of emergence, while games such as GABRIEL KNIGHT SINS OF THE FATHERS (1993) and MAX PAYNE 2: THE FALL OF MAX PAYNE (2003) are examples of games of progression. As we will see in the next chapter, such a clear division in categories is of course only possible in theory: many games of progression include emergent elements, while an increasing number of games of emergence contain some form of story. Still, Juul's game guide test is a reliable means to determine whether the main category is emergence or progression.

Finally, as I will often discuss computer games in comparison to books and films and as some of my comparisons will involve media texts[24] that have the same title even though their medium differs, I will use typography to help distinguish the different media types. I will use italic small capitals for COMPUTER GAMES; small capitals for TV-PROGRAMS, TV-SERIES, DOCUMENTARIES and FILMS; the conventional italics for *books*; and underlined italics for <u>*radio-shows*</u> and <u>*radio plays*</u>. Thus, the typography indicates that *The Lord of the Rings* (1954-55) must refer to Tolkien's original trilogy, while THE LORD OF THE RINGS (1981) must be a computer game adaptation.

Demographics

Before going into more specific aspects of this dissertation I want to shed some light on the popularity of computer games as a medium, especially since gamer demographics is still one of the areas in the media landscape where perception and reality often clash. Contrary to popular belief, for instance, the average age of the American gamer is 34 years old; the average age of the most frequent game purchaser is 40; more women over 18 (33%) play games than men under 18 (20%); and 67% of American households play computer games (ESA, 2009)[25]. Gamer data furthermore shows that more women play games on the Internet than men, especially in the over fifty age group (Hautvast, et al.,

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[24] A media text refers to any kind of media object, not only textual ones. Novels, short stories, films, radio plays, comic books, graphic novels, computer games etc. are all media texts.

[25] The TNS NIPO / Newzoo *Today's Gamers United States National Gamers Survey 2009 Summary Report* gave a higher percentage of 83 (Hautvast & Hagoort, 2009).

2008; McMillan, 2009). And these women do not only play casual games; as data for the online role-playing game *EVERQUEST II* show, its main gamers are women of around 40, who not only play more often but also longer than men (Williams, et al., 2009).

Survey data also show that computer game usage has risen steadily since the year 2000. Even in the 2009 recession, the game industry was thriving despite the fact that only a few major titles were released in the latter months of the year (Flamberg, 2009; Pham, 2009)[26]. The first survey in the Netherlands on computer games usage was held in April 2008 by TNS NIPO, on behalf of Newzoo, a game advertising company. It was a Computer Assisted Self Interviewing (CASI) survey with 5,032 respondents aged 8 years and older. The major findings were that 72 percent of the Dutch play computer games, on average around 4.9 hours per week[27]. A breakdown in age groups is given in Graph 1 and Graph 2 below.
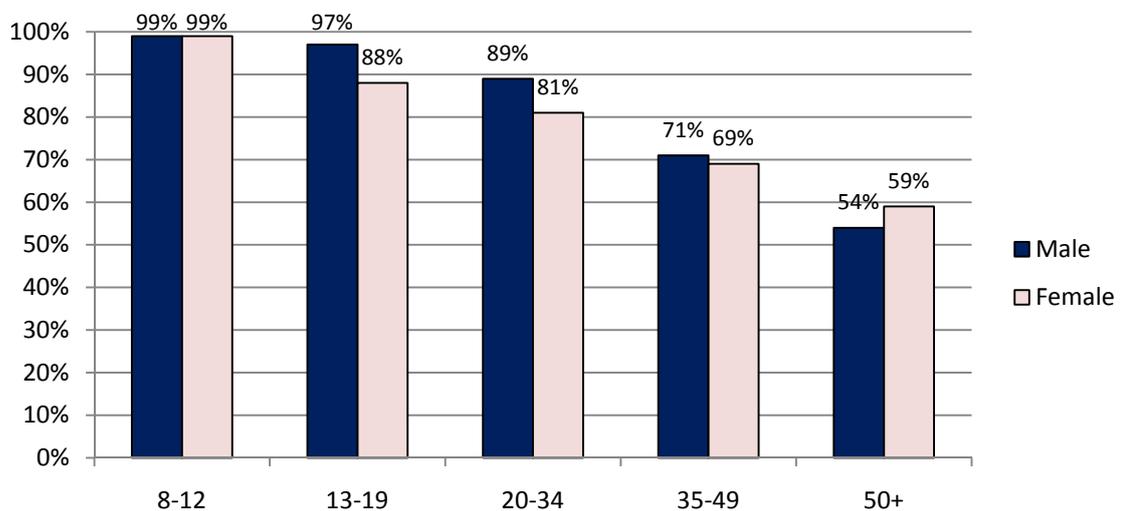
Graph 1 Percentage of the Dutch population aged 8 years or older playing computer games, source Newzoo TNS NIPO *Nationaal Gaming Onderzoek 2008*.

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[26] Including the unexpected smash hit CALL OF DUTY MODERN WARFARE 2, which grossed 550 million dollars in the first five days after its release in November 2009, as opposed to the first week's box office revenue of HARRY POTTER AND THE HALF-BLOOD PRINCE taking only 394 million dollars (Ammelrooy van, 2009).

[27] In 2009 there was a slight decrease in the number of gamers (which was now 70%) and in the time spent (which dropped to 4.1 hours on average) (Hautvast, et al., 2009).
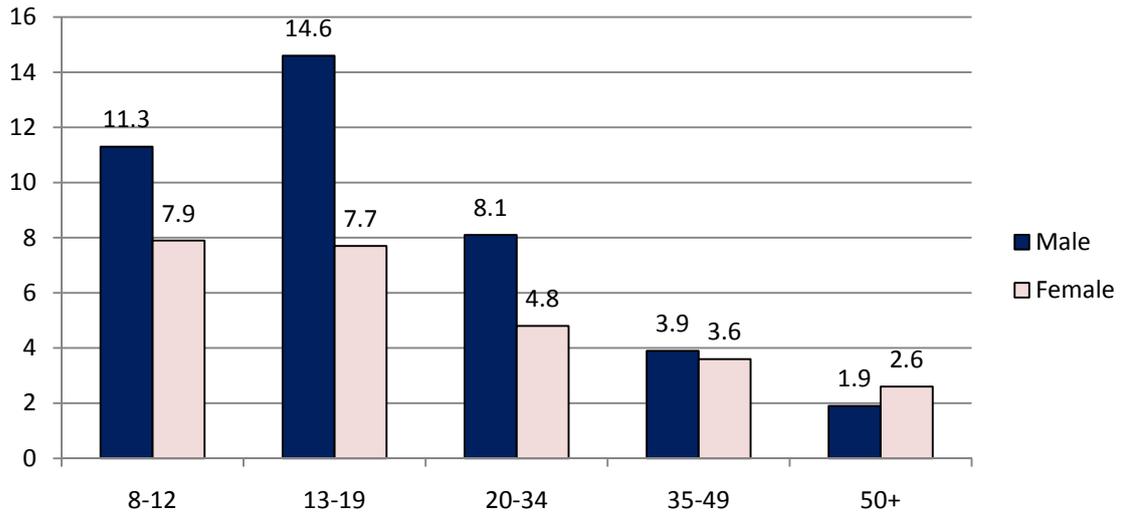
Graph 2 Weekly number of hours spend playing games reported by respondents,
source Newzoo TNS NIPO *Nationaal Gaming Onderzoek 2008*.

The Newzoo / TNS NIPO report also compared the time spent playing games with other forms of media consumption, but the data they used for the comparison were two years older and dealt with a different segment of the Dutch population (age 15 and older)[28]. Keeping in mind that computer games as a medium continue to increase in popularity, where two years is a long time, the data below (Table 1) gathered by the marketing research agency Qrius (Berndt, 2009) give a more accurate overview for the younger segment of Dutch gamers. The quantitative part of the Qrius research surveyed 4,444 youths aged between 6 and 29 and 1,195 parents of children of 9 years and under. The qualitative part consisted of nine group discussions with youths aged 9-26 years old. To enable a comparison, the data have been recalculated to hours per week:

	10-11	12-14	15-19	20-24	25-29	Average
Television	7.70	9.33	9.10	10.15	11.20	9.50
Radio	1.63	2.92	4.43	6.77	8.87	4.92
Magazines etc.	0.82	1.05	1.28	1.05	1.05	1.05
Newspapers	0.35	0.82	0.93	1.17	0.93	0.84
Mobile Phone	0.93	2.57	3.85	3.73	3.38	2.89
Gaming	5.25	6.07	4.43	3.03	3.27	4.41
Internet	4.43	8.52	11.67	11.55	10.27	9.29

Table 1 Media Consumption by Dutch youths in 2009 (recalculated to hours per week)
derived from Qrius *Jongeren 2009*.

The data show that on average Dutch youths spend most of their leisure time watching television and surfing on the Internet. Interestingly, the hours per week spent playing

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[28] These data were gathered in 2006 by Interview NSS (now part of Synovate) a leading Dutch marketing research agency, on behalf of the Interactive Advertising Agency (IAA).

games are considerably lower than those reported in the *Nationaal Gaming Onderzoek*, for instance, for the 12-19 year olds the Newzoo / TNS NIPO report states 11.15 hours, while the Qrius data give 5.25 hours, which is less than half.

The latest European data on gamers were compiled by Nielsen Games in the spring of 2010 for the Interactive Software Federation Europe (ISFE)[29]. In total 5800 gamers, 2800 non-gaming parents and 1600 non-gamers aged 16 to 49 were interviewed[30]. A gamer was someone who had played at least one computer game in the last six months, which applied to 25.4%[31] of the respondents[32]. The ISFE survey showed that the PC is still the platform of choice for the European gamer, followed by the Wii and the Mobile Phone. The Nintendo DS(i) and the Playstation 2 were the preferred secondary platform. The main reasons given for playing games were fun (61%), relaxation (53%), and a positive way to pass time (53%). The main reasons given for not playing games were lack of time to play (41%), games are boring (23%), games are too expensive (11%), and games are for children (9%). Only 7% said that they did not play games because they thought that they were too violent. The survey showed a marked increase in casual gamers, not only in their game and platform preferences but also in the number of hours spent playing games. The data also showed the ongoing trend to play games online, as 71% of the gamers had played an online game in the past three months. The majority of online gamers play casual games (58%), while only 26% play massively multiplayer online role-playing games (*MMRPGS*). The report confirmed another more recent trend, namely the broadening of the gaming audience. This was reflected in the number of interests listed, showing that gamers were as likely to engage actively in some form of sport or to read a book as they

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[29] The countries in the survey were UK, France, Germany, Italy, Spain, Portugal, Netherlands, Sweden, and Poland.

[30] In the UK, France, Italy, Germany, and Spain 2000 16+ adults were interviewed face to face, in Poland, Sweden and the Netherlands the sample was 1000 16+ adults. The interviews in Sweden and the Netherlands were CATI (Computer Assisted Test Interpretation) interviews.

[31] Note that the ISFE report did not include children under 16, an age group where most children play computer games. This is also stated by the report itself as one of the reasons why the number of gamers is lower than in other reports. Another reason the figure is lower than for instance that of the United States is that this is the average for all the countries in the survey. According to the survey Poland, Italy and Germany had significantly less respondents who answered positively when asked if they had played a computer or video game in the past six months. Other reasons why this figure is so low, compared to other data, could be the discrepancies of self-reporting (see below) and the fact that without further explanation people tend to equate the term computer game or video game with hardcore or online games and often forget to include the games already installed on their computer or mobile phone.

[32] For the Netherlands there is again a marked but inexplicable difference compared to the Newzoo / TNS NIPO 2008 survey. The ISFE report found that 64% of 16-29 year olds were gamers, 35% of the 30-49 years old, and 11% of the 50+ years old; the Newzoo / TNS NIPO survey gave >80%, >70% and 56.5%, respectively. Although the 2009 survey by TNS NIPO showed a small decrease in these numbers in the older two age groups (>65% and 52% respectively), this still does not account for the vast differences with the ISFE survey. One possible explanation could be different criteria to determine whether someone plays games or not (which Hautvast et al. do not give).

were to play a computer game. The dominant pastimes, however, were watching television, socializing and spending time on the Internet (ISFE, 2010).

These survey data show that, especially in the over 25 category, the number of casual gamers now vastly outnumbers the number of hardcore gamers, a trend which has been picked up by the industry, as we will see in the next chapters. The average time spent playing games and the shift to online casual games also means that most of the games played by this section of the demographics are games of emergence. This also proved true for the students of my own department of Arts, where data I gathered in 2007 showed that only 29.02% played games of progression, compared to 70.98% who played games of emergence[33]. This was a difference I did not expect to find as my own prejudices automatically presumed that Arts students would prefer games with stories[34]. My prejudices were challenged even more when the parallel survey held amongst the students at the department of Computer Science showed that they did prefer games of progression (58.59%) over games of emergence (41.41%)[35].

However, how reliable are these data? In his keynote speech at the Computer Games / Players / Game Cultures conference in 2009, Christoph Klimmt pointed out that gaming data is usually obtained by self reporting, which is demonstrably unreliable[36]. Furthermore, the diversity of devices and playing situations makes researching computer game usage a lot trickier than other forms of media consumption, such as going to the cinema or watching television (Klimmt, 2009). What reliable data there are, for instance Nielsen Games, who for their United States reports track actual game usage with programs instead of relying on self-reporting, usually is only of national interest, as similar data from other countries are not available[37]. The *EVERQUEST II* survey, which used both self-reporting and game data collected on the game's servers, moreover showed that female gamers underestimate or understate (socially acceptable response) their playing

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[33] Of the 328 respondents (116 male, 266 female) only 5 male and 19 female students said that they had never played a computer game, even though I explicitly asked non-gamers to take part in the survey. The average age of the respondents was 24.05 years. The youngest respondent was 18 years of age, the oldest, a history student, was 72 (she did not play computer games). The oldest gamer was an Art History student of 50.

[34] Independent of their study subject all female Arts students preferred playing casual games. The male students' preferences did vary. Students of History, Antiquities and Arts and Culture preferred strategy games, while students of Modern Languages and Culture and Language and Communication preferred (online) role-playing games.

[35] 229 students of the department of Computer Sciences took the survey: 23 female and 206 male. Of this group only two (both male) reported that they did not play computer games. The average age of the respondents was 22.85 years. The youngest respondent was 18 years of age, the oldest 49.

[36] As self-reporting of playing time is quite unreliable, I did not ask the respondents in my survey to estimate their playing time. I only asked when they had last played a game (today, yesterday, this week, this month, etc.).

[37] This kind of statistical data gathering is still inadequate as it is only applicable when gamers use a personal computer.

time with a discrepancy of nearly three times the males' rate (Williams, et al., 2009). So until a more reliable method has been devised, gameplay demographics based on self-reporting should be interpreted with a certain amount of scepticism[38].

Still other evidence of the popularity and recognition of computer games as a major factor in present-day life and entertainment is all around us. Already in 1995, a survey found that the game character Mario was better known to American children than Mickey Mouse (Henshūshitsu, 1995). It is therefore not surprising to find that the 25th birthday of the game *SUPER MARIO BROS.* (1985) was world news on 13 September 2010[39] (Image I.1).

Image I.1 The Dutch national newspaper *de Volkskrant* front page (left) where Mario's birthday is featured as the top inside article. And (right) the full page article.

Mario's creator, Shigeru Miyamoto, who also created *THE LEGEND OF ZELDA* games series (1986-present) with its own legendary game character Link and who more recently gave us the Nintendo DS and Wii, not only has won many awards but was also the first person to be included in the Academy of Interactive Arts and Sciences (AIAS) Hall of Fame in 1998 (GameSpot, 1998); was made a *chevalier dans l'ordre des Arts et des Lettres* in 2006

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[38] There is, for instance, a remarkable difference between commercial reports produced for the industry and data gathered for independent or government surveys. For online games, server logs would be a reliable method, but as these data are considered to be industry secrets, companies seldom share them, not even for academic research. (Similarly commercial reports like the Newzoo/NIPO one can only be bought for prices that only the industry can afford). However, these problems not only affect computer game usage, gathering data on Internet usage suffers from similar complications. Data cannot be gathered objectively as an increasing number of people use different devices to access the Internet and self-reporting is becoming blurred as people use the Internet for different types of media consumption switching frequently between applications or doing things simultaneously (mailing/texting while listening to streamed music or watching online TV).

[39] Some of the news sources that featured the story were: *BBC World Service*, *Nos Radio 2 Journaal*, JEUGDJOURNAAL, *Time*, *USA Today*, and *de Volkskrant*.

Introduction

(*Ministère de la culture et de la communication service de presse*, 2006); and was made a fellow of the British Academy of Film and Television Arts (BAFTA) in 2010[40]. Peter Molyneux, founder of Bullfrog and of Lionhead Studios and designer of the legendary games *POPULOUS* (1989)[41], *BLACK & WHITE* (2001), and the *FABLE* series of games (*FABLE*, 2004; *FABLE II*, 2008; *FABLE III*, 2010), was also made a *chevalier dans l'ordre des Arts et des Lettres*, one year after Miyamoto (*Ministère de la culture et de la communication service de presse*, 2007). He was awarded the AIAS award in 2004 (GameSpot, 2004), the same year in which he received the Order of the British Empire. And President Barak Obama, whose election campaign was characterized by the use of digital communication media, even put a billboard in the XBox360 racing game *BURNOUT PARADISE* (Image I.2), a fact that in itself became a well published news story (Wagner Au, 2008; Jenkins D. , 2008; Ashcraft, 2008; Kolk, 2008)[42].

Image I.2 Obama election billboard in *BURNOUT PARADISE* (Electronic Arts, 2008)

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[40] The British Academy of Film and Television Arts has recognized computer games since 1998. Since 2006 computer games have had the same status as films and television and in 2010 the BAFTA Video Games Awards had their own separate ceremony hosted by Dar O'Brian. Source www.bafta.org.

[41] The first so-called 'God game', where you interact with the game characters as if you were their deity.

[42] And questions on computer games are now also included in such prestigious quiz programs as UNIVERSITY CHALLENGE and BBC4's fiendishly difficult intellectual quiz ONLY CONNECT.

Game Studies

Computer games and narrative has been a research topic since the mid 1980s. It is part of the humanities-based approach to computer games[43], which looks at games as a cultural phenomenon (meaning, context, reception) and as an aesthetic phenomenon (games as artefacts in and off themselves, critically analysing games). Other approaches to the study of computer games are the industry and engineering approach, which mainly studies computer games from a design or game theory perspective and the social science approach[44], which studies games as a social phenomenon, mainly focussing on such topics as computer game addiction and the possible relation between computer games and aggression[45]. Within the humanities approach, games and narrative was appropriated by literary and film studies, as I already mentioned above. But just as film theory established itself as a separate academic field from the 1960s onwards, as its appropriation by literary studies also proved to be counter productive[46], game studies established itself as a separate academic field at the beginning of the 21st century:

> 2001 can be seen as the **Year One** [bold in the original] of Computer Game Studies as an emerging, viable, international, academic field. This year has seen the first international scholarly conference on computer games, in Copenhagen in March, and several others will follow. 01-02 may also be the academic year when regular graduate programs in computer game studies are offered for the first time in universities. And it might be the first time scholars and academics take computer games seriously, as a cultural field whose value is hard to overestimate. (Aarseth, 2001b)

The formative years of computer game studies were trying, as Aarseth foresaw:

> The greatest challenge to computer game studies will no doubt come from within the academic world. […] Games are not a kind of cinema, or literature, but colonising attempts from both these fields have already happened, and no doubt will happen again. And again, until computer game studies emerges as a clearly self-sustained academic field. To make things more confusing, the current pseudo-field of "new media" (primarily a strategy to claim

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[43] Before the arrival of the computer game, games were mainly studied from an anthropological (e.g. Stewart Cullin) or historical (e.g. Johan Huizinga) point of view.

[44] For a discussion of the various approaches, see for instance the *Handbook of Computer Game Studies* (Raessens & Goldstein, 2005).

[45] Studies into the alleged detrimental effects of playing computer games have led to what is called the video game controversy, because for every study that 'proves' that there is a link between violent behaviour and computer games or aggression and computer games (e.g. the meta study by Anderson "An update on the effects of playing violent video games" (2004)), there is an equal number of scientific studies stating that such a link cannot be proven (e.g. Kutner & Olsen *Grand theft childhood: the surprising truth about violent video games and what parents can do* (2008)). Other studies stress the beneficial effects of playing computer games (e.g. Johnson *Everything Bad is Good for You: How Today's Popular Culture Is Actually Making Us Smarter* (2005) or Gee *What Video Games have to Teach Us about Learning and Literacy* (2007)). The main problem with the social science approach is that it hardly ever analyses the games themselves.

[46] As Buscombe put it, "we are dealing with a visual medium [therefore] we ought surely to look for our defining criteria in what we actually see on the screen" (1970 (reprint 2003), p. 14).

> computer-based communication for visual media studies), wants to subsume computer games as one of its objects. There are many problems with this strategy, as there is with the whole concept of "new media," and most dramatically the fact that computer games are not one medium, but many different media. [...] We end up with what media theorist Liv Hausken has termed media blindness: how a failure to see the specific media differences leads to a "media-neutral" media theory that is anything but neutral. This is clearly a danger when looking at games *as* [italics in the original] cinema or stories, but also when making general claims about games, as though they all belonged to the same media format and shared the same characteristics. (ibid.)

In fact, the first few years of game studies were dominated by a struggle for dominance between those who viewed computer games as a narrative medium (the narratologists, a.o. Janet Murray, Henri Jenkins, Marie Laure Ryan and Julian Kücklich) and those who stressed the 'gameness' of computer games as rule-based media texts (the ludologists, o.a. Gonzalo Frasca, Espen Aarseth, Frans Mäyrä, Jesper Juul, Markku Eskelinen and Aki Järvinen). This impasse is now referred to as the ludology versus narratology controversy or the ludology versus narratology debate. In hindsight it is clear that the controversy largely stemmed from misconceptions about terminology and the interpretation of certain theoretical concepts, such as immersion, which can be seen in a more traditional way as the 'suspension of disbelief' and surrendering oneself freely to the enjoyment of the story (Murray's interpretation of the term; the immersion of books and films) or immersion as 'flow' as an active engagement with(in) a constantly changing and adaptive process (Mayra's interpretation of the term; the immersion of games). At the time, however, the debate was quite fierce, and echoes could be heard in many research articles and theoretical works on computer games well into 2007.

Of course, with any new discipline the struggle for ownership of the intellectual turf comes under debate, as Aarseth already stated. Yet, although there now seems to be a consensus that not all games use stories, that stories and games are fundamentally different, and that stories can and do add enjoyment to gameplay, looking at computer games as narratives still seems to be of lesser importance than discussing the fundamentals of gameplay. One of the more adamant opponents of games as narratives was Jesper Juul. He opened his thesis, *A Clash between Game and Narrative* (1999), by quoting game designer Walter Freitag to demonstrate that interactivity and narrative are incompatible and 'never the twain shall meet':

> There's a conflict between interactivity and storytelling: Most people imagine there's a spectrum between conventional written stories on one side and total interactivity on the other. But I believe that what you really have are

two safe havens separated by a pit of hell that can absorb endless amounts
of time, skill, and resources.

The point Juul wanted to make was "[t]hat computer games and narratives are very different phenomena and, as a consequence, any combination of the two, like in 'interactive fiction', or 'interactive storytelling' faces enormous problems" (ibid.). Juul did not deny that many games included narration or narrative elements but, like many game researchers, he opposed the control of narratology at the time: "the dominant theoretical way of dealing with computer games still seems to be claiming that they are in some way narratives" (ibid.). And even though he revised his opinion in 2005 in his book *Half-Real: Video Games between Real Rules and Fictional Worlds*, where he conceded that games can tell stories[47], his definition of games of progression shows that he still was uncomfortable with story-structured games:

> *Progression* [italics in the original] is the historically newer structure that became part of the video game through the adventure genre. In progression games the player has to perform a predefined set of actions in order to complete the game. One feature of the progression game is that it yields strong control to the game designer: since the designer controls the sequence of events, progression games are also where we find most games **with storytelling ambitions** [bold in the original]. (2005, p. 5)

Juul's preference for games of emergence can also be read in his views on the role of fiction in computer games:

> Fiction plays a different role in different games and game genres, and while some players may be thrilled by the fiction of a game, others may dismiss it as unimportant decoration of game rules. Nevertheless, there is a general scale from the highly replayable multiplayer game (the emergence game) to, at the other extreme, the 'complete-once' adventure game (the progression game), where the player only faces each setting once." (ibid., p. 6)

It seems that Juul's singling out of the adventure game as the negative end of the game scale still harks back to the ludology – narratology controversy. However, in the paragraph in his book entitled "Games as Narratives" he argues that the controversy over his dismissal of games as a storytelling medium stems from different interpretations of the term narrative. In an earlier article *Games Telling Stories? A Brief Note on Games and Narratives* (2001), Juul had argued that whereas one would always be able to deduce the story or at least the broad outlines of the plot of the STAR WARS film (1977) from a *Star Wars* novel, this was not possible from a computer game like Atari's STAR WARS (1983). This statement was challenged by Henri Jenkins, who wrote that this was a highly dated

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[47] But only under specific conditions, as will become clear below.

view of the concept of adaptation, pointing out the practice of transmedia storytelling where media texts no longer are self-contained, but function as parts of a larger narrative construct (2004)[48]. However, in *Half-Real* Juul countered Jenkins' rebuttal, saying that there was no controversy, because Jenkins' interpretation of narrative was "narrative as any kind of general setting or fictional world" while he himself had referred to "narrative as the presentation of events (story*telling* [italics in the original] / narration)" or "narrative as a fixed and predetermined sequence of events (*story*) [italics in the original]". He elaborated his argument by pointing out that both views on narrative are possible in books, films and general storytelling but that the first is only possible in games if one viewed games as fictional worlds and the second only in progression games as the "predetermined sequence that the player has to complete" (pp. 157-158). Thus, they had each used a different interpretation of the term narrative and there was no actual disagreement. Apart from the fact that Juul's choice of example to illustrate the difference between films and computer games was unfortunate, as the STAR WARS franchise is one of the oldest ones and most *Star Wars* books[49] were not adaptations of the films but stories set in the larger STAR WARS universe, from which the story of the original film could not be deduced, Juul was right in his definition of the use of narrative in the 1983 Atari *STAR WARS* game. This game was a game of emergence, which was based on the successful arcade[50] title of the same name. The game does not really have a built-in story; like many games at that time, it has a backstory, which puts the gamer in the right mindset[51]. The aim of the game is to give the gamer the opportunity to take part in the Rebel assault on the Death Star, de facto taking on the role of Luke Skywalker. But whereas the early games in the *STAR WARS* franchise were mostly about flying X-Wings fighters, when technology allowed it, story games were produced which elaborated on or added to the film narratives, such as *STAR WARS: DARK FORCES* (1995) and its sequel *STAR WARS: JEDI KNIGHT – DARK FORCES II*

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[48] I will discuss this use of storytelling in games in Chapter V.

[49] Only from 1999 on, starting with *Star Wars Episode I: The Phantom Menace* (Brooks)*,* were occasional novels based on the film scripts. But these must be seen as pure merchandise, as can be deduced from their varying covers which all refer directly to the films.

[50] Arcade game refers to games that were played in arcade halls on cabinets dedicated to one game. In the next chapter I will give a more precise definition of the term.

[51] "It's the challenging action of STAR WARS: THE ARCADE GAME [all capitals, etcetera, in this quote are in the original]--here in an exciting home video game featuring 3 different screens! You're at the controls of LUKE'S X-WING FIGHTER< heading straight for the DEATH STAR. Your mission: to destroy it before the EMPIRE seeks its revenge on the REBEL base. Lock your sights on attacking TIE FIGHTERS and blast them with your PROTON TORPEDOES. Race along the DEATH STAR's surface, firing on giant towers. Finally, dive full throttle into the DEATH STAR's equatorial trench. You'll need split-second timing to avoid all the obstacles as you streak through the trench in search of the main reactor. Hit it and you've blown the DEATH STAR out of existence! MAY THE FORCE BE WITH YOU™" (Back of Box, Atari 5200 version). "Obi-wan Kenobi is gone but his presence is felt within the force. The Empire's Death Star under the command of Darth Vader nears the Rebel planet. You must join the rebellion to stop the empire. The force will always be with you" (Opening Screen, Commodore64 version). See the next chapter on this use of narrative in games.

(1997). These games were games of progression with a built-in story and therefore not "narrative as any kind of general setting or fictional world". These are also the kinds of games Jenkin's was referring to, showing again that a former ludologist and a former narratologist were still at cross purposes.

Research aims and questions

In the above, I elaborated quite extensively on the ludology versus narratology debate. I did this because for someone like myself, who never doubted that computer games with strong story-elements or even games that were story-structured were not only possible but had been a reality since the mid 1970s, the ludologists' dismissal of storytelling games was incomprehensible; however, the narratologists' view that all games are narratives was clearly also counterfactual. As I have already stated, I agree that not all games are story-based and would add that even fewer games are story-structured. The short and highly addictive games of emergence like *TETRIS* (1984), *ZUMA* (2003) and *JEWEL QUEST* (2004), for instance, do not have narrative elements; they are purely rule-based, which makes them endlessly (re)playable, as Juul pointed out. Other games, however, the games I will be discussing in this dissertation such as the *GABRIEL KNIGHT* series (1993-1999), not only have narrative elements, they are story-structured games of progression: adventure games and action adventure games. Their addictiveness comes from wanting to find out what happens next. Consequently, it seems logical to assume that their replayability depends on the number of alternative story elements they contain and on possible alternative endings they have. An example is *DEUS EX* (2000), which is highly replayable because the game's objectives can be solved in numerous ways, not only playing style (stealth, action) but also interaction with the non-player characters (subtle, confrontational). Add to this that each problem has at least two or three different solutions and it becomes clear why replaying the game can result in a very different experience. The same goes for the game *HEAVY RAIN* (2010). The gaming community, however, shows that even games that have a fairly linear story are replayed. Moreover, in modern games where the gamer has a wide choice of actions, of which following the story-line is only one (such as *ASSASSIN'S CREED II* (2009)), the game's narrative still is the main factor that drives gamers on, as witnessed by comments on discussion forums such as this one:

> AC2 I could play all day, and I just finished it again earlier today. Something I noticed as I replayed it was (I was just replaying for a refresh on the storyline, and Minerva's message etc) that I HATED those DLC [downloadable content] missions, specially since all I wanted to do was get to that vault after beating up the pope the first time in Venice. They just completely pull

> you away from the story and I then realized why they were taken out from
> the original game (besides money purposes). (gsosolid, 2010)

Games with a strong built-in story are hugely popular, for example GRAND THEFT AUTO IV (2008), which holds the Guinness World Record both for "Highest Grossing Video Game in 24 hours" and "Highest Revenue Generated by an Entertainment Product in 24 Hours", selling 3.6 million copies on the first day of its release (Guinness World Records, 2008), or ASSASSIN'S CREED II (2009), which has sold over 8 million copies to date and which won several awards as best (action adventure) game of the year[52], showing that despite the trend for casual games, there still is a large community who love to engage in a story or character driven experience.

However, even though these games are story-driven or story-structured this does not mean that they tell their narratives in the same way as books and films do. Consequently, using narrative theory from literary or film studies, until recently the dominant way to analyse these games, is not the way forward. To return to Holzman, whom I quoted at the beginning of this chapter, existing paradigms "weren't conceived with digital media in mind, and as a result they don't exploit the special qualities that are unique to digital worlds" (1997, p. 15). He goes on to say that "We need to transcend the old to discover completely new dimension of digital worlds" (ibid.), which is exactly what is happening with the medium of the computer game. The story-structured game has matured enough so that it no longer needs to refer to older media. Now it is first and foremost a computer game; and as a game of progression, a new medium for telling stories. In this dissertation I therefore want to explore how games tell stories, how over the years they have developed their own (visual) grammar to do so and how this differs from the way stories are told in film and (popular) literature. I furthermore want to explore how the dominance of narrative theory has contributed and still contributes, especially when looking at games from a comparative point of view, to misunderstandings in the analysis of story-structured computer games. Finally, I want to show that computer game theory should not be purely synchronic, but that a full understanding of game history and game hardware history is necessary not only to analyse and interpret games correctly in their historical context, but also because the definitive game skills we need to be able to play present-day games are still firmly linked to those of the originating games.

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[52] Amongst others best action adventure game at the Spike Video Game Awards; IGN action game of the year for the XBox360 and XBox360 game of the year; Game Informer XBox360 game of the year; and GamePro, Eurogamer and *The New York Times* game of the year.

Approach

The chapters in this dissertation are based on a series of separate articles in which I explored different narrative aspects of computer games (genre, theme, space and setting)[53], the history of games of progression, and the role the medium plays (amongst other things) in the depiction of character[54]. I will first explore genre. This chapter will, by necessity, be the longest because it not only explains what the term genre entails in relation to computer games; it also looks into the fundamental difference between games on the one hand and (popular) literature and film on the other hand. This, in turn, gives some insights into how the use of existing narrative terms in computer game theory can lead to misconceptions, especially when comparing story-structured games with other narrative media. This topic will be continued in Chapter V, *Computer Games as a Comparative Medium*. Furthermore, as genre has as yet only been explored minimally in computer game theory, a more comprehensive examination of the different aspects of genre and genre theory in relation to the computer game was called for, as well as a critical examination of some of the few alternative game taxonomies in existence. Finally, in this chapter I will define the adventure game, the most clear-cut example of a story-structured game, and the main focus of the rest of the dissertation.

In the third chapter, which looks into the history of games of progression, especially the adventure game, it will become clear that the origins of this genre lie in the planning and re-creation of military campaigns and the exploration of an underground cave, to which (fantasy) story-elements from J.R.R. Tolkien's *Lord of the Rings* (1954-55) were only added later. But it will also show that the addition of these elements increased the popularity of both the wargames as well as the cave exploration game, and that a combination of both, exploration and mapping on the one hand and a strong built-in story on the other hand, still defines the genre of the adventure game and its successors today. The chapter furthermore discusses the technical progression of the genre, an understanding of which is necessary to comprehend how game designers adapted the (visual) grammar of these games over the years. The chapter will furthermore show how game designers likened their games to other narrative forms (stories, films), but, as I will explain in the first chapter, not to promote them literally as a repurposing of the other medium[55], but rather as a means of reference to guide the prospective gamer's expectations. A close examination of the history of a particular computer game genre, but

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[53] Often in relation to other media, especially (popular) literature and film.
[54] The complete list of the articles can be found in Appendix C.
[55] As Bolter and Grusin (2000) presuppose.

also of computer games as a whole, is yet another aspect of computer game theory which is still rarely looked into.

In Chapter IV, *Thinking out of the box (and back in the plane)*, I will discuss the different ways in which space is used in story-structured games. The use of space is **the** aspect of the diegetic world where games differ most notably from written stories and films. My departing point will be Axel Stockburger's modalities of space[56], which instantly clarify how and why space in games is different. In the main part of the chapter, however, I will use Stockburger's modalities of narrative space, rule space and audiovisual space to compare two adventure games from the same series, in order to discuss how the visual grammar of the adventure game changed when it moved from its familiar 2D or 2.5D depiction to 3D. This development in the games' visual grammar, made possible by technical advancements, will also serve to counter one of the ludologists' presuppositions, namely that gameplay is solely defined by game rules. The term visual grammar, used in visual semiotics and visual design[57], is new to the study of computer games, as is its examination in the context of specific game genres, as well as examining the implications a change in the visual grammar has on genre, game skills, and gameplay.

In Chapter V *Computer Games as a Comparative Medium*, I will first discuss the terms adaptation, transmedia storytelling, cross-media storytelling, and franchising in relation to the computer game and show that both adaptation and transmedia storytelling were a (necessary) part of games from very early on. In this part, I will also discuss whether the observed differences in storytelling techniques, found in previous chapters, might explain why adaptations of computer games in other media are rarely successful. In the second part, I will examine the differences there are in the depiction and use of setting in films and games. Looking at location, camera, colour, and props, I will show how their use is dependent on the technical possibilities available at the time and how these tie in with the visual grammar used. In this discussion, I will return to my findings in the previous chapter that gamers have to learn to read this visual grammar and once they have mastered it, will have to 'unlearn' it when a game adopts the visual grammar of another medium. In this chapter, it should become clear that comparing computer games to other media can be negatively influenced by different interpretations of the 'same' narrative term, as already demonstrated in Chapter II, as well as by differences in the visual grammar of the specific medium.

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[56] See his PHD thesis *The Rendered Arena: Modalities of space in video and computer games* (2006), the fundamentals of which I will present in Chapter IV.
[57] See for instance Kress & van Leeuwen (1996)

In Chapter VI, *Remediating Character*, I will return to Tolkien and *The Lord of the Rings*, to look at the depiction of character in different media. Tolkien's book not only shaped the basic character types we find in role-playing games[58], it also formed the inspiration for many (early) computer games. Nevertheless, adaptations of the book are not limited to computer games: we find *The Lord of the Rings* converted in many forms, such as a radio play, (animated) films, a musical, and even board games. Because of this, the work is an ideal candidate to show how adaptation is not only determined by the (creative) choices of the author[59] of the adaptation but also by its medium. The character under investigation will be Tolkien's Aragorn. First, I will show how Tolkien uses the medium of the written word to (re)create his version of the familiar hero-king myth and how he was influenced by another depiction of this myth, Sigurd the Volsung, a hero and story that Tolkien liked from an early age. Next I will show how different adaptations (radio play, animated film, fiction film, and computer game) gave us different Aragorns and how our vision of these different versions was also influenced by the language and the (technical) affordances and limitations of the medium used. This will again show how games as a narrative medium differ from other media.

In the final chapter, *Computer Games as a Narrative Medium*, I will draw together the findings of the previous chapters and discuss what the 'gameness' of story-structured games means in terms of the study of their diegetic world. How appropriate is existing narrative theory when we want to study and analyse these kinds of games? Is it flexible enough to accommodate this new narrative medium? Alternatively, are games, even the progressive ones, too different, as Aarseth and others still argue? To better answer this question I will also look at recent theories on narrative writing for computer games and new developments in the theoretical approach to game design.

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[58] A game genre that was derived both from tabletop role-playing games as well as from the adventure computer game genre.

[59] I use author here in its broadest sense as the person who has the final say on what is included and excluded in the adaptation, what will be emphasized, etcetera.