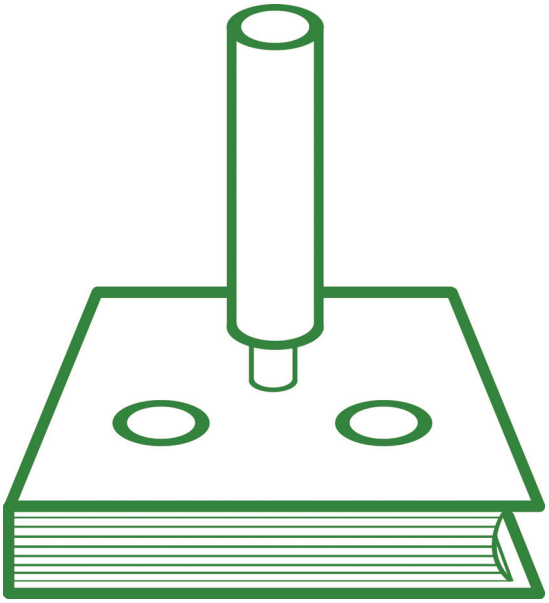
Story and Game Combined

Using Machinima for Interactive Experiences



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Erklärung

Ich erkläre hiermit, dass ich die Arbeit selbstständig und ohne fremde Hilfe verfasst habe und dass sämtliche Quellen im Text oder im Anhang nachgewiesen sind.

Declaration

I declare that this work is written solely by me and all sources are referenced in the text or in the bibliography and mediography.

Erik Schneider

Abstract

This thesis is going to introduce machinima and its history and techniques. Due to the possibilities of real time 3D, I will propose to use the interactive potential of machinima. Furthermore, the concepts of the terms story and game, as well as their differences, will be discussed. This will be concluded with the suggestion of a new way of combining stories with game-elements, in order to make use of the diversity in the field of combining stories and games.

Based on this theoretical point of view, I will present three ideas for the use of the interactive potential of machinima: an interactive installation, digital theatre and live cinema. I will exemplarily develop the idea of an interactive installation to a more concrete description, a concept. This concept will use my idea of combining a story with game-like elements.

Keywords: Machinima, Real-time 3D, Virtual Environment, Interactivity, Story, Narrative, Dramaturgy, Narratology, Ludology, Game Studies, Computer Game, Interactive Storytelling, Immersion, Flow, Suspense, Interactive Installation, Digital Theatre, Live Cinema

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1 Introduction

1.1 Machinima

It is possible to create films with computer games[1], games which are not originally meant to be used for this purpose. The freedom players have in some of today's games is used to be active outside the spectrum the game designers imagined. Out of this freedom and through the creative use of some players, people started to make films within the virtual 3D environments provided by these computer games.

Machinima is the term commonly used to describe the process of the production and the films created by it. It can be seen as a new genre of animated film, as one of the animation techniques, examples of which are cell animation, stop-motion, clay animation and puppet animation. It is a DIY (Do it yourself) approach, which evolved because of new technical possibilities. It is very close to common 3D computer animation but there is one big difference: The games are interactive and therefore everything is trimmed to be fast – to be real-time. As you can run through levels in real time so you can shoot films in real-time. This technical function opened up many possibilities and created techniques, such as virtual puppeteering. It also contains a potential for new kinds of interactivity, not only in the animation technique but also in other circumstances.

I want to give a glimpse of the possibilities offered by the usage of a real-time animation technique and will present three ideas which could be put into practice by using current computer games.

[1] I will use the term computer games and will not differentiate between video games and computer games.

1.2 Stories and Games

There have always been controversial discussions about the relationship between stories and games. Why is this of any interest for this thesis? A computer game is, without doubt, a game and the majority of films contain a story. Machinima makers use the freedom of the games to produce films, which raises many questions: Are machinima makers still playing whilst creating a film? Or is it work? How can play and work be separated? Although these are all interesting questions, these will not be looked into further by this thesis. Instead, the key questions will be: How can machinima combine story and game not only for the creator but also for the participant? Is it possible to provide people the means to experience both? What is the difference between games and stories? Is a game a kind of story? To answer these questions I am going to investigate some traits of stories and games and I will look into why and how they can be combined.

1.3 Two Ideas and One Concept

The questions about games and stories will lead to one of my ideas of what can be done with machinima besides making films. This idea will be developed further and presented as a concept for an interactive installation. The other ideas will propose other usages of machinima as a technique, one of them being a digital theatre play which will combine live animation with a theatre play. The other one is about the usage of machinima for live cinema.

1.4 Overview

The structure will follow a path from theoretical to more practical subjects. At first, I will introduce machinima, describing its history, different techniques and its limits and potentials. After that, I will discuss the relationship between games and stories as they are important backgrounds for my ideas. This chapter is the theoretical basis and will not offer much information on practical use. In order to develop a concept, I will look into the possibilities of

combining stories with game-like elements. Two ideas and one concept will be based on a basic concept, called multipurpose concept.

1.5 Motivation

To be able to easily understand and interpret a text, I find it useful to know a little bit about the motivation and intention of the writer. So why am I writing this thesis?

First of all, the intention is to explore new possibilities. I am interested in theoretical scientific research and practical work. Therefore I will combine scientific research about games and stories with an actual concept.

I have already written a Diplomarbeit (diploma thesis) about interactive music videos[2] and I also produced two works in this field, one of them at the **Hochschule der Medien**, where I also wrote this master thesis. I am interested in how interactivity in digital media can be used, apart from common applications, and especially with low cost and easy to use interface-technologies such as web cams, the **Wii Remote** (the controller for the **Nintendo Wii** game console) or the **Gametrak** (a special game controller for PC and **Sony Playstation 2**). As well as being interested in DIY approaches and independent work like the one of many machinima makers, I am also a VJ (visual jockey) and have connections to puppet play students at the **Staatliche Hochschule für Musik und darstellende Kunst Stuttgart**. In addition, I am very interested in the visual part of different media and in developing concepts and stories for visual media.

I hope you enjoy reading my thesis and that you find something in it for your inspiration. If you have any comments or questions, please let me know. You can email me (eriks@serik.de) or visit my website (www.serik.de/en).

[2] Schneider 2005

2 Machinima

In this chapter I will introduce machinima and its origins, techniques and its advantages and disadvantages. Furthermore I will describe the interactive potential with current examples and take a look at the future of machinima.

2.1 What is Machinima?

The word machinima means two things. On the one hand, machinima is a way to produce animated films "within a real-time virtual 3D environment."[3] On the other hand, a film produced with the technique of machinima is also a machinima. Therefore the word describes the technique and the films which are produced by it.

Although the definition above by **Paul Marino** does not include computer games, the relationship of machinima and computer games cannot be underestimated. Computer games and their players are the origin of the machinima culture.

At the **Machinima Festival Europe** in 2007, **Paul Marino** stated his previous definition a little bit different: "Machinima is filmmaking in a 3D virtual world, often using videogame technology."[4]

Not only did he include videogames in the definition, but he also changed "environment" to "world". Assumingly because environment can be interpreted very technically but one reason why so many people are making machinimas is because there is already a whole virtual world with objects, levels and avatars waiting for them as a kind of film set.

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[3] Marino 2004:1

[4] This can be seen on a video the machinima group Lit Fuse Films recorded during the festival. (Lit Fuse Films: Machinima Awards. (Website))

2.2 History

In this day and age - which some people call the information age - it is really difficult to follow things back to their origins. The availability of information, especially through the internet, has increased enormously and people do consume a lot of information. This information can be the possible source of inspiration. Because of this unnoticeable way of retrieving information, people are able to gather enough knowledge and cheap hardware to start something new without anyone else noticing. The history becomes untraceable. Who inspires who? Who stole from whom? Who was first? We cannot answer these questions with any certainty. This is not despite the amount of information, but because of them. Therefore the history of machinima and similar developments could possibly be told in many different ways.

I will stick to the common machinima history which is most certainly not untrue and written by some of the known machinima gurus themselves.[5] Before we come to this, I will give one, not too serious hint at a possible alternative beginning of machinima. This example of how you can set the roots of machinima differently dates back earlier than the common machinima history: The first man who actually worked out a program to output a moveable 3 dimensional graphic of any kind probably showed it to someone very proudly and said: "Look at this. I have done that."[6] And in this situation we have it all together for a machinima live performance: a filmmaker (the man who is controlling or programmed the motion), a display and an audience.[7]

To consider this the first machinima, would have some consequences. Every time you play - or better: perform - a 3D computer game while somebody is looking over your shoulder what you do and what you get is machinima. In this case you could start with one of the first games with a real-time virtual 3D environment: **Elite**.[8] This game is a classic in the game history and was released in 1984.[9] The 3D graphic was displayed with wireframes.

Lowood even sees **Spacewar!**, probably the earliest computer game from 1962, in relation to machinima: "Spacewar! players demonstrated computer-mediated performance through play."[10]

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[5] Marino 2004 and Kelland 2005

[6] One candidate for this is Ivan Sutherland who invented Sketchpad in 1963 (Sutherland 1963) and probably the first virtual reality and augmented reality system in 1968. (Grau 2003)

[7] Of course it is possible to say that this is not a film but as I will mention later the term is not only used for films anymore.

[8] Schmitt 2006

[9] There are even earlier games with 3D graphics. Battlezone from 1980 displayed wireframes (McMahan 2003:70) and I, Robot from 1983 was the first game with polygonal graphics. (Wolf 2003:61)

[10] Lowood 2008:172

Even if there are now plenty acknowledged experimental machinimas or music videos without stories done with machinima the machinima scene itself recognises the first machinima as a machinima because it was "a narrative story told within the game space."[11] Before we come to this point, let's take a step back in time.

2.2.1 The Beginnings without a Name

To write the history in the point of view of the actual machinima culture I have to begin with the computer game **Doom**. It was released in 1993 by the company **id Software**. This title is commonly called one of the landmarks in game history and especially important in the history of first-person-shooters. What makes the game interesting for the study of machinima's history is a function to record demos. It was possible to record the events in the game and therefore it was possible to play them back later by usage of the game. Of course there have been predecessors to **Doom** like **Ultima Underworld** or **Wolfenstein 3D** and there was even a flight simulator with a record function called **Stunt Island**[12] and also the racing game **Stunts**. But only **Doom** united three important facts: first-person-shooter, record option, huge success.

The game only recorded the events based on which it would be possible to recalculate the things which happened during the play or performance. Actual frame-by-frame video material was not stored. Because of that, the file sizes of these demos were small. Therefore players started to share their performances with other gamers.

> "Thus, DOOM linked unprecedented multiplayer competition, reproduction of gameplay as demo movies, and a context for spectatorship through the creation of a player community that would distribute and replay these movies. The result was nothing less than the metamorphosis of the player into a performer."[13]

But also behind the façade there has been a very important design decision.

> "He [DOOM developer John Carmack] built modifiability into DOOM, but in a manner that simplified the process and didn't require such [referring to modifying older games] hacks. He did this by separating the core "game engine" from the code for specific "levels" of the game defined by maps, objects, monsters, graphics, sound, and so on, which came to

[11] Marino 2004:6
[12] Schmitt 2006:12
[13] Lowood 2007:64

> be called the "game assets." The explicit intention of this separation was to make it possible for players to create their own content by designing their own maps or "levels.""[14]

Therefore, the player was not only becoming a performer but also a co-author of the content.

With the record option in **Doom** a big step in the direction of machinima was taken, but **Doom** was not a real 3D engine. For instance it was not possible to look up or down and the game level designs were actually 2D and therefore some things were not possible for the level design. For instance there was no way to put two rooms on top of each other.

During this time in machinima's history, while everybody was playing first person shooters, nobody paid attention to **Microsoft** producing a game for kids: **3D Movie Maker**. Within the game the user makes a film. So basically this was the first software dedicated to machinima before this term even existed and apparently no gamer or filmmaker seemed to have any interest in that. It is another hint to the fact that the history of machinima is more bound to the game culture than to technical development and possibilities.

But let us go back to the written history. Another step was taken by **id Software** with the release of **Quake** in 1996. The machinima development benefited especially from three functions. Firstly, the game environment was now fully 3D.[15][16] Secondly, **id Software** kept the record function. And thirdly, it was possible to play together with several people over the internet.

People grouped together mostly over internet and called themselves clans. They distributed demos about important battles and of their fighting abilities.

The final step towards machinima was taken by a clan called **The Rangers**. They recorded a demo in which they told a simple story. The players did not play the game but were acting for the recording of this first machinima: **Diary of a Camper**. After the film spread throughout the community a lot of these Quake movies, as they were named at this time, were made.

The next step was the use of tools to enhance the production process of Quake movies. Two notable efforts were done with **LMPC** (Little Movie Processing Center) by **Uwe Girlich** and **Keygrip** by **Dave Wright**. Latter "become know as the Adobe Premiere for Quake demo files."[17][18]

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[14] Lowood 2008

[15] The game Descent was using a fully 3D engine more than one year before the release of Quake, but because the game was not as popular as Quake and had limited support for modifications it was not important for machinima's history.

[16] Some of the technology behind Quake is documented in Abrash 1997 and the source code of Quake has been licensed under GPL (GNU General Public License) since 1999.

[17] Marino 2004:7

[18] Uwe Girlichs tool was actually already available for Doom but was not used to make demos with stories.

Uwe Girlich wrote in his description of the demo file format:

> "For people with too much spare-time Quake can replace a full 3D modelling system for cartoons or the like.
>
> The demo file can contain console commands, which the client runs during replay. With this feature it should be possible to write a screenshot after every time stamp in the demo file. This makes it very easy to create a MPEG movie out of a DEM file."[19]

At the same time new websites were dedicated to Quake movies.

Henry Lowood listed **Diary of a Camper** as one of the founding trilogy of machinima alongside with **Quake done Quick** and **Operation Bayshield**.[20]

Quake done Quick was a series of highly popular demos of speedruns. Speedruns were attempts to finish levels within the game as fast as possible. **Anthony Bailey** wrote a program using **LMPC** to repositioning the camera after the recording. Therefore the **Quake done Quick** demos could be seen as documentaries of challenges in a virtual environment.

Operation Bayshield was released by **Clan Undead** in January 1997. They put a lot of programming into their demo and managed to provide own assets like 3D models, sounds and animations. **Lowood** notes also that they "borrowed extensively from traditional linear media, both in conventions of storytelling and playful allusions to popular media such as television and cinema."[21] **Lowood** therefore called parts of **Operation Bayshield** a remediation in machinima of films referencing **Bolter** and **Grusin**.[22]

In 1997, **Quake II** was released and after a while the tools where also updated according to the new demo file system. **Keygrip 2** added a new function which was already used by **Anthony Bailey**. It was possible to set the camera even after the demo has been recorded.

On the graphical side, **Quake II** was not only more advanced but offered the players an option to use their own 3D models within the game. In 1999, **Strange Company**[23] was the first team which released a **Quake II** film which was entirely produced with own assets: **Eschaton: Nightfall**.[24]

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[19] Girlich, Uwe: The unofficial DEM format description. (Website)

[20] Lowood 2007:74

[21] Lowood 2007:71

[22] Bolter 1999

[23] Strange Company is a UK-based machinima production company founded 1997 buy Hugh Hancock.

[24] For a closer look at the beginnings of machinima see also: Lowood 2008.

2.2.2 The Term "Machinima" Was Born

In 2000, the website **Machinima.com** was launched by **Hugh Hancock** of **Strange Company**. The term was created by **Hugh Hancock** and **Anthony Bailey** in search for a term that would describe the production process but not imply the use of a specific game as the term Quake movie does. The term machinima refers to the words machine and cinema but the first outcome machinema was misspelled in an email by **Hugh Hancock** who accidentally wrote machinima. Both "liked the typo (plus it gave a nod to the Japanese animated art form, anime) and the new name was quickly adopted."[25][26]

Not only did the website establish a new term, it also showed another way of working on machinimas. The first machinima launched on **machinima.com** was **Quad God** by **Tritin Films**. It was created with **Quake III Arena**. Because this game did not have a demo function, they recorded it to video and afterwards captured and edited it. This new way offered advantages and disadvantages. The file size of a video is much bigger than that of a demo but on the other hand, it is possible to watch it even if the game is not installed. This offered new ways of distribution beyond the world of gamers.[27][28]

As the search for the new term machinima already implies, people started to make films also with other games like **Half-Life** or **Unreal**. **Unreal**, for example, was released in 1998 and the gamers also developed and released machinima tools like **Unreal Movie Studio** (UMS) in 2000 and **Real Time Movie Studio** (RTMS) in 2001.

2.2.3 Machinima Achievements

After the term machinima was found the history of course went on. I will name some achievements before I will speak of the current state of machinima.

In 2000 the company **Fountainhead Entertainment** was founded by **Katherine Anna Kang**, formerly business development director of **id Software**. The company built a machinima tool called **Machinimation** based on the game **Quake III Arena** by **id Software**.

In 2001 news appeared that **Steven Spielberg** was using the **Unreal Tournament** engine to pre-visualize the visual effects for his upcoming film **Artificial Intelligence: AI**.[29] Even if this is mentioned very often in machinima's history, I believe that this has to be seen from a different angle. It is

[25] Marino 2004:12

[26] The term machinema was actually used the first time in a mailinglist for Quake 2 Demos by Anthony Bailey in 1998. (Kuntze 2006)

[27] Michael Nitsche calls this "reel" machinima. (Nitsche 2005:213)

[28] Different production methods will be discussed later.

[29] IGN: Spielberg and UT. (Website)

possible that the production team of **Artificial Intelligence: AI** had no idea about machinima at the time they decided to use a game engine as a tool. The 3D software with which films like **Artificial Intelligence: AI** are created are not made for real-time rendering but to communicate ideas during the process a real-time renderer is very useful. Therefore it is possible, that the decision to use a game engine for pre-visualization was completely separated from the existing machinima development. Also, the end-product, the film **Artificial Intelligence: AI**, has nothing to do with machinima any more. A real-time engine was used as a tool during the process of creation. This shows the disconnection of some technical developments and machinima's history. The reason is probably because machinima emerged out of a subculture of certain gamers. Therefore it could also be seen as a subculture rather than as an animation technique.[30]

In 2002 **Anthony Bailey**, **Hugh Hancock**, **Katherine Anna Kang**, **Paul Marino** and **Matthew Ross** met at the **Game Developers Conference** and founded the **Academy of Machinima Arts and Sciences**. The first important step of this organization was to hold a festival. In the same year the first **Machinima Film Festival** took place.

In 2002 Epic released **Unreal Tournament 2004** and with it the first tool directly supporting the machinima makers: **Matinee**. In the description of the **Unreal Engine 2** which was used for **Unreal Tournament 2004** you can even find the explicit reference to machinima:

> "Realtime "Matinee" cinematic editor for comprehensive camera, actor, and effects direction – for in-game cinematics and pure machinima-style movies."[31]

In 2003 the music video **In the waiting line** for the song of the British band **Zero 7** was another of machinima's achievements. The video was produced by **Fountainhead Entertainment** and was the first machinima on rotation on **MTV**.

At the **Florida Film Festival** in 2003 The **ILL Clan** made a live show with machinima, which was called **Common Sense Cooking with Carl the Cook**.

The possibly biggest machinima success story started in 2003. The first episode of the machinima series **Red vs. Blue** was produced by **Rooster Teeth Productions**. **Michael Burns** created a trailer for **Red vs. Blue** for a website called **drunkengamers**[32]. The video was hardly seen by anyone and the website closed down after a while. But a few months later, the computer game magazine **Computer Gaming World** asked if they could distribute some videos from the **drunkengamers** site. Because of this request the **Red vs.**

[30] See also the chapter Machinima Defined for more thoughts about this topic.
[31] Unreal Technology: Past Versions (Website)
[32] Website not online anymore.

Blue project was resurrected. At this time they were unaware of the machinima culture. One of the cofounders said in an interview:

> "When we first started Red vs. Blue we thought we were completely original. We never imagined that there were other people out there using video games to make films, much less that it was a new art form with a hard to pronounce name and an official organization."[33]

In the end they produced 100 episodes in 5 seasons up until 2007. In 2004 the **Wall Street Journal** estimated that **Red vs. Blue** had about 650.000 downloads per week.[34] **Strange Company** founder **Hugh Hancock** estimated in 2006 that **Red vs. Blue** "is currently turning over nearly 200,000 dollars a year."[35] They even got a free license of the game **Halo** from the game studio **Bungie Studios** and their parent company **Microsoft** without creative guidelines.[36] On the **Rooster Teeth** website it is possible to buy the seasons on DVD and merchandise articles like calendars, cups and t-shirts.

When **Red vs. Blue** started in 2003 **Fountainhead Entertainment** released their machinima **Anna**. A lot of people refer to this film because it was one of the earliest which set itself totally apart from any game related elements.

In 2004, a commercial was produced for **Volvo** which was partly live-action and partly machinima. The spot is called **Game: On** and received a lot of attention.

Also in 2004, the first machinima-book was printed. **3D Game-Based Filmmaking: The Art of Machinima** by **Paul Marino**[37] is mostly not about machinima's history or culture but about teaching ways to make machinimas. It describes two ways to produce a film, one with **Fountainheads** Software **Machinimation** and the other one with the **Unreal Editor**.

In 2005, another book appeared, called **Machinima: Making Animated Movies in 3D Virtual Environments**.[38] It describes the medium machinima and does not include hands-on tutorials as the first one did.

Epic Games and **Nvidia** supported the work of the people who were making modifications or non-interactive real-time films with a contest between

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[33] Kosak, Dave: GameSpy Examines the Teeth of the Rooster. (Website)

[34] Delaney 2004

[35] MacGregor, James: Shooting People: Shooter Films Interview with Hugh Hancock, Machinimateur. (Website)

[36] A license for a well known game engine is normally very expensive. For example: There can be found several information on the internet which suggest that the Unreal Engine 2 did cost about 350.000 USD. (Nzone: Make Something Unreal Contest — Winners. (Website))

[37] Marino 2004

[38] Kelland 2005

2004 and 2005. The winners won several thousand dollars and the best film was the machinima **The Journey** by German student **Friedrich Kirschner**.

In 2005, a computer game was released which was possibly influenced by the machinima culture: **The Movies** by **Lionhead Studios**. The goal of the game is to produce films that can be shared online with all the other players. This, of course, had the effect that several thousand new machinimas appeared on the internet.[39] **Lionhead Studios** founder **Peter Molyneux** said in an interview:

> "One of the dreams for the game was that as you play, you realize you could direct a movie of your own."[40]

Machinima was also used in television. The **BBS Two** series **Time Commanders** used the game engine of **Rome: Total War** to recreate famous battles in history. The program ran from 2003 until 2005. **MTV2** mixed games and music in their program **Video Mods** between 2004 and 2006. The television show **Decisive Battles,** which was shown on the **History Channel** in 2004, also used **Rome: Total War.**

> "Within the show, the Decisive Battles producers use Creative Assembly's game Rome: Total War to stage recreations of Rome's historical battles. While the game's graphics are decidedly "game-like," they prove to be sophisticated enough to illustrate the program's intent."[41]

2.3 Machinima Today

How is machinima technology used today? For which projects, films, purposes? Who is using it? I want to try to answer this and write a little bit about the current state of machinima.

First of all, every now and then there are new games released which play an important role in the machinima culture. Some of these are **Halo 3**, **Half-Life 2**, **The Sims 2**, **Neverwinter Nights 2** and **World of Warcraft**. The currently used computer games influence machinima heavily. That is immanent in the nature of machinima because most productions use computer game engines.

[39] Lionhead Studios: The Movies™ Online (Website)
[40] Musgrove 2005
[41] Marino, Paul: O'Reilly -- Machinima: Filmmaking's Destiny. (Website)

Nevertheless there are some new ways to machinima without computer games. **Cirque du Machinima: Cukoo Clock** by **Tom Jantrol** won the price for Best Experimental at the **Machinima Festival Europe** in 2007. This machinima was made with **Autodesk Motionbuilder**, a software product for real-time 3D character animation.

Another example from the winners of the **Machinima Festival Europe** is **Machinima Island** by **la-interactiva** for the category Best Technical. This project was created in **Second Life**, an online virtual world.

Apart from that, there is also a new tool for machinima: **Moviestorm**. This program was developed solely for making machinima. It is also mentioned in a new machinima-book: **Machinima for Dummies**.[42] This book, published in 2007, was written by **Hugh Hancock** and **John Ingram** from **Strange Company**. This company also produced one of the few feature-length machinimas up to date. Their film **Bloodspell** is freely available under the creative common license. They used **Neverwinter Nights** from **Bioware** as the 3D engine.

As **Hugh Hancock** was working on **Bloodspell** he got to know a few **Bioware** employees and as they were looking for a Cinematic Designer he put them in touch with **Paul Marino**.[43] That was the start for at least three machinima makers, **Paul Marino**, **Mu Nansen** and **Joanathon Perry**, to work on the **Bioware** game **Mass Effect** because of their machinima experience.[44] This shows, that the game industry is interested in machinima and their makers, which is not surprising, as cinematics[45] are often very close to machinima.

There are a lot of new people making machinimas. To name an example, there is the group **Lit Fuse Films**.[46] Their short film **Ignis Solus** and the music video **Summer in City 17** are really astonishing. **Lit Fuse Films** enhance the visual quality and camera movements in the post production with programs like **Adobe After Effects**.

Lit Fuse Films also encountered one of the big problems with machinima at the moment: copyright. Some companies such as **Epic** or **Bungie** encourage their users to use their games for machinima, but legally it is often very unclear what is allowed and what not.

> "Amateur machinima is generally accepted, and it is reasonable to say that any game that comes with mod tools supplied is fair game for amateur machinima. However, a machinima made using characters, sets, and sounds straight out of a game would be considered in law a derivative work, and distributing it com-

[42] Hancock 2007

[43] Marino, Paul: 3DFILMMAKER: Hugh steps down. (Website)

[44] Marino, Paul: 3DFILMMAKER: Mass Effect on Going Pro. (Website)

[45] In-game films are called cinematics or cut-scenes.

[46] During the work on my thesis, two members of Lit Fuse Films were also hired by Bioware as Cinematic Designers. (Stoneman, Robert: Lit Fuse Films (Website))

> mercially without permission would be considered a violation of copyright."[47]

A few people like the **Strange Company** or **Rooster Teeth Productions** had the luck to get permissions from game studios. **Lit Fuse Films** got an opportunity to make a machinima for **Sony**. They tried to get connected with **Valve** but they could not get an answer from them.[48]

But there is a sign of hope at least for some machinima makers. **Blizzard** and **Microsoft** made changes to their EULAs (End User License Agreement) which basically permits the use of their games for non-commercial use. In addition, with **Second Life** there is now a platform available which can be used even for commercial purposes. This can also be done with dedicated machinima software like **Machinimation**.[49]

Apart from that it still gets really complicated when somebody tries to produce professional work with a computer game engine. Some of these engines can be licensed but often for several hundred thousands of dollars. If machinima makers want to use computer game engines as a tool to do professional work, these issues have to be resolved in the future.

2.4 Machinima and Art

Apart from the commercial side, there are interesting developments, connecting art and machinima.[50] The artist collective **Jodi** used modified computer games for some of their works.[51] The aim of their work is to deconstruct games. In one of the latest pieces in 2006, they used **Max Payne 2**.[52]

Andreas Koller works with generative visuals. In 2006, he produced some of his visuals with the real-time 3D software **Virtools**. His visuals are music visualizations for events.[53] **Daniel van Gils** is a designer and developer of interactive media from the Netherlands. He is working with the engine of **Doom 3** in audiovisual live performances. While making music with synthesizers, the music equipment also controls the engine via sounds and control sig-

[47] Kelland 2005:98

[48] Hear the podcast: Rice, Phil: the overcast » overcast #023 (Website)

[49] Mentioned by Hugh Hancock in his machinima round-up for the year 2007: Hugh, Hancock: Machinima for Dummies: Machinima in 2007 part 2 - Legal Machinima and the Brain-Drain. (Website)

[50] See for example the exhibition curated by Katie Salen (Salen, Katie: Quake! Doom! Sims! (Website)) and the Diplomarbeit by Magit Nobis (Nobis 2005).

[51] Makela 2006:24

[52] More about their work in Cannon 2007:45 and Stalker 2006.

[53] Scholz 2007

nals.[54] There is also the Spanish VJ project **gLanzoL** by the duo **glaznost**. They have been working with the game **Counterstrike** for visual performances since 2001.[55]

Apart from the use of game engines for visuals, games are also being used to play music. The term sonichima has been coined for these works by **Julian Oliver**[56], who, together with **Steve Pickles**, is working on an audiovisual installation in which participants can make music and visuals. This work is built with the open source engine **OGRE**.[57]

Friedrich Kirschner has created the digital puppet play **Ein kleines Puppenspiel**, which was shown live in Germany in 2007 and 2008.[58] An actor was tracked and motion captured. This data was transmitted to a virtual character and the actor was therefore steering the puppet on the screen.[59]

These examples can be seen as a form of machinima but also as a form of game art. **Bittanti** defines game art as "any art in which digital games played a significant role in the creation, production, and/or display of the artwork."[60] Therefore, the term game art does not include art within the game, or the game seen as a work of art. Some machinimas can therefore be seen as game art. **Cannon** states that machinimas can be closer to video art as to the computer games in which they were produced.[61]

The artist **Miltos Manetas** even states that he probably made the first machinima when he recorded a scene from a flight simulator. His work was first shown in an exhibition in 1996.[62] Game art is not only very close to machinima in terms of history, it can also reference to machinima. In 2006 **UBERMORGEN.COM** launched machinimas which reflected on the hype about machinimas.[63] But the machinimas from **UBERMORGEN.COM** are not made with 3D but with 2D games, which leads to another question: Why are works like the **Super Mario Movie** by **Cory Arcangel** and **Paper Rad**, which is an experimental short film created by hacking **Super Mario Brothers**,[64] not considered to be machinima? Only because it is 2D and not 3D?

All the examples above could not only be considered to be art, but also to be machinimas. Nitsche[65] states that machinima can contain cinematic art

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[54] ANIMATION IN NEUEN MEDIEN - Project Blog: Machinima auf der Games Convention - vor dem letzten Messetag (Website)

[55] Cannon 2007:43

[56] Cannon 2007:44

[57] Oliver, Julian and Pickles, Steven: fijuu (Website)

[58] Kirschner 2007

[59] See the website for more information and videos: Kirschner, Friedrich: Ein kleines Puppenspiel - a realtime digital puppet performance (Website)

[60] Bittanti 2006a:9

[61] Cannon 2007:43

[62] Bittanti 2006b

[63] Quaranta 2006b

[64] Quaranta 2006a

[65] Nitsche 2007

and during its history made the steps of media development from toy to mirror to art.[66]

2.5 Ways to Produce Machinima

Most of the machinima makers are using a computer game engine in a way that it was not meant for. Instead of playing they are producing animated films. Because these people do such an uncommon thing it is not really surprisingly that everybody has his or her own way to make this work. But after all, there are similarities in the ways to produce machinima.

2.5.1 Techniques

I am going to use the structure of the book **Machinima: Making Animated Movies in 3D Virtual Environments**[67] as a guideline for my description of the different techniques. It is focused on the way the shooting is done and because machinima itself is focused on the fact that it is done in a real-time 3D virtual environment it seems to be the best way to look at the different production methods.

2.5.1.1 Recamming

Recamming was one of the first complex techniques used in machinima. It is also a production technique that is only working with machinima. The idea is that actors are playing their role in the computer game. That means that as many players as needed are connected through a network. While they are acting the events are being recorded but instead of a typical video, where the information is stored in a sequence of two dimensional still images, data is stored that is able to recreate the events in the game engine. Therefore it is possible to change a lot of things after the acting has been recorded. The positions of multiple cameras can be set and the editing timed. Time can be bent or stretched. Lights can be added or changed and even the acting can be manipulated.

Recamming is one of the ways early machinimas were done. Today probably the only tool to do this is **Machinimation** from **Fountainhead Entertainment**.

[66] Levinson 1985
[67] Kelland 2005

2.5.1.2 Puppeteering

The word puppeteering comes from the fact, that players act with their avatar – they use it as a puppet. This process is the closest of the four presented here to a live-action film shooting or to a theatre play. The actors and at least one cameraman are connected over a network. While the actors are playing, the cameraman puts himself in the right position so that his view resembles the view of a camera. The images are then recorded. Some use the signal of the video card to record it on another PC, camera or recorder. Others use a program like **Fraps** which records the video directly to the PC's hard drive. Some games even include such functionality directly. After the shooting the videos are normally cut with a NLE (non-linear editing system) like **Adobe Premiere** or **Windows Movie Maker**.

This technique is also used in live performances. Instead of editing recorded material the video from the engine is presented directly to an audience. **Michael Nitsche** calls live machinima the most promising form.[68]

2.5.1.3 Scripting

In some games it is possible to write down the events that should take place within a script language. Although it is called scripting, it is quite a visual process to do this within newer games like **Unreal Tournament 3** because of very handy tools. The final product is very similar to Recamming, in that it is data which contains information about what is going to happen while watching the machinima. The difference is that, with the method of scripting, everything is created from scratch. This leaves a lot of control to the maker but the process is of course further away and most of the times a lot slower than a real-time live performance. There are also hybrid forms. For example a scripted machinima is reacting on inputs during a live performance.

2.5.1.4 AI

AI (artificial intelligence) is the technology mostly used with the game **The Sims 2**. A video recorder is integrated in this computer game. The game itself contains virtual persons which can only be controlled indirectly. This makes the shooting complicated in the sense that the actors often do not behave in the way the director wants them to. The game setting has to be tuned for the shooting so that every shot that is necessary for the machinima can be recorded properly.

[68] He therefore gives a detailed description of three live machinima examples: the performances of the ILL Clan, the research at the Mixed Reality Laboratory in Nottingham and a group of students at the Georgia Institute of Technology. (Nitsche 2005:224)

2.5.2 Teams

Usually, machinimas are done by groups. Often, they only know each other over the internet, but with the techniques of scripting and AI it is also possible to shoot machinimas with a one man team.

Not only in the matters of shooting but of the whole production process good machinimas tend to have different people for acting, directing, sound, music, modelling, scripting and many more.

2.5.3 Assets

As described earlier, assets are the content of the game, such as graphics, models, animations, sounds and music. The advantage of shooting in a game environment is the existence of an entire world. Especially for starters it is good to be able to shoot directly in their favourite game.

To make original films, a lot of efforts have to be made. In machinima history, **Anna** was mentioned because it did not use the game assets provided by the original game. Instead, everything was built with 3D programs. This is usually done with software for 3D animation and modelling like **Maxon Cinema 4D**, **Autodesk Maya** or **Autodesk 3ds Max**. Animations of 3D models, e.g. characters, can be even more complicated to achieve since the game engines are not made for the purpose of making animated films. Especially when it comes to direct contact between characters and objects or between characters, workarounds are often necessary in order to provide satisfying solutions. Problems also occur in the importing and rigging process when a 3D model is transferred from 3D software to an engine. This can be time consuming and as well limiting the possibilities of an animation.

2.5.4 Distribution

Even though recamming and scripting allow other distribution methods, these are negligible. Nowadays most of the machinimas are distributed as videos for download or direct view on the internet. There are only some people like **Rooster Teeth Productions** who offer DVDs.

Besides the internet, there are competitions and festivals for machinima or festivals that have categories for machinima.

2.6 Real-Time 3D

To work in a real-time 3D environment there has to be software that is capable of displaying 3D graphics in real-time. In nearly every case, machinima makers make use of game engines for this purpose. I already mentioned **Second Life** and **Autodesk Motionbuilder** as examples of software which is not directly game related. I want to describe some methods to produce real-time 3D graphics. Not all of them are being used by machinima makers.

2.6.1 Game Engines

A game engine can be seen as a collection of provided functionalities. Typical parts of an engine are: graphic engine, physics engine, sound and music, scripting, animation, artificial intelligence and networking. These engines are often delivered with development tools to make use of the different engine parts for different purposes, usually the development of computer games. A lot of engines are designed for several platforms to support not only PC games but also game consoles. Also a lot of engines are based on graphic APIs (Application programming interface) like **Direct3D** or **OpenGL**.

There are a lot of game engines on the market. On the commercial side, there are **Torque Game Engine**, **TV3D**, **C4 Engine** and **Unity**. There are also open source engines available such as **OGRE**, **Irrlicht**, **Crystal Space** or **jMonkey Engine**. The provided functionalities differ. For example some of the engines are only graphic engines. Most of the time excellent programming skills are required to make use of these software components.

The newest well known game engines from game studios are **CryEngine 2**, **Unreal Engine 3** and **Source engine**.[69] Games like **Crysis**, **Unreal Tournament 3** and **Half-Life 2** which use these engines include editors to modify the game content. In addition, there are also modifications which are used or especially made for machinima, e.g. **moviesandbox**[70] for **Unreal Tournament 2004** or **Garry's Mod**[71] for **Half-Life 2**.

Although **Second Life** is not a game, the features of the engine are very similar to those of 3D computer games. This also applies to software

[69] In general there is an engine behind every 3D game but some of them are only used for a certain game or by a certain game studio. These engines cannot be purchased and are therefore not well known or documented.

[70] Kirschner, Friedrich: Moviesandbox - a machinima tool for the Unreal Engine (Website)

[71] Team Garry: News - GarrysMod.com (Website)

dedicated to machinima. There are at least five software products that refer to machinima: **iClone**, **Machinimation**, **Moviestorm**, **VirtualStage, Antics**.[72]

2.6.2 Other Real-Time 3D Software

There is other software available with which 3D real-time graphics can be produced. Here I want to mention the relatively easy to use graphical programming languages such as **VVVV**, **Max/MSP+Jitter** and **PureDatra+Gem** or the non-graphical **Processing**. Especially in the areas of installations, performances, exhibitions and art, these software products have become quite popular. But ultimately, they have nothing to do with the machinima culture.

There are also a lot of very different solutions that can produce real-time 3D graphics with or without programming that I will not explain here in detail: **Virtools**, **Microsoft XNA**, **Soundium** and so on. There is also software for real-time 3D graphic which focuses on character animation called **MotionBuilder** by **Autodesk**.

2.6.3 Demos

The demoscene is a subculture of people who produce demos.[73] Demos are computer programs which show motion graphic, music and sound. These programs calculate their output in real-time. A demo demonstrates the skills of the programmers.

The demoscene is not part of the machinima culture but there are certain similarities.[74] It would be possible to include demos in the very broad definition of machinima as making films in a real-time 3D virtual environment but most certainly it would be seen as incorrect. One of the reasons would be that the demoscene is a lot older than the machinima culture and has evolved to something that can be called an underground art form. There are tight rules and specifications inside this subculture. To mix the demoscene with machinima would be wrong in many cases.[75]

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[72] More software exists that is not directly dedicated to the machinima culture but which is similar to it, like the previsualisation software FrameForge 3D Studio or Kids Movie Creator.

[73] These demos have nothing to do with the demos from games like Quake.

[74] There are other positions: Nitsche states that the machinima community sees its origins in the demoscene (Nitsche 2005:211-212).

[75] For more information about demos read Tamás 2006 or visit scene.org (Website). For a comparison between coded demos and recorded demos also read Lowood 2008.

2.7 Machinima Genres

At the beginning of machinima and even today, the stories are highly bound to the computer games. The first machinima **Diary of a Camper** was telling the story of a camper. In first-person shooter terms, a camper is a player who is waiting in a hideout to shoot other players from there. To call somebody a camper is an insult because to camp is conceived to be cowardly and sneaky. Therefore, the first machinima is focusing on something that has to do with the game, respectively with the game-culture itself. **Diary of a camper** can be seen as a step from playing the game to a performance of playing the game. The events in this machinima could have almost happened in a real game situation.

Most of machinimas today reference to the game they use. Sometimes only because of the use of the games content but very often also the story refers to the game world.

Red vs. Blue has been the most watched machinima series although it is set in the world of the game **Halo**. The title and the setting of the game refer to multiplayer computer games but the way the story deals with that is very intelligent and is able to make these references also understandable to many non-players.

Red vs. Blue is a great example for one big genre inside the machinima culture: comedy. Comedies often include references to the game or the game-culture.

Diary of Camper is widely accepted as the first machinima but before this film, there were already other recorded demos. These can be seen as the beginning of another machinima genre: documentaries. They are still very popular today. Most of them reference to skills and the exploration of world or engine limits.

There is a distinction between these machinimas and machinimas with a story. Inside-out machinimas are recorded plays and outside-in machinimas are machinimas which use the game engine as a tool.[76]

Most of machinimas are made in first-person shooters or MMORGs (Massively multiplayer online role-playing games). Because the bounds between the games and the machinimas are so strong, this heavily influences the type of films that are produced. Most of the typical genres are therefore the same as those of the game industry: Action, Fantasy, Science Fiction and War.

Because of these bounds the machinima genre diversity was also widened with the diversity of computer games. Titles like **The Sims 2** or **The Movies** also brought new machinimas in the genre-fields of drama, non-game referencing Comedy, Western, Adventure and others.

[76] Nitsche 2007

Other common genres of machinimas are music videos and experimental films although they only constitute a small part:

> "One interesting feature of experimental filmmaking with Machinima is the dominance of the narrative form. In contrast to many other experimental film techniques nearly all Machinima pieces have a basic narrative form. The structure can be extremely simple highly elaborate; a simple progression through a certain game level or a feature-length conspiracy story, a basic narrative concept is present in most pieces available so far. The dominance of narrative might be a result of the depiction of movement through virtual space, which is understood as a travel and the description of such a travel leads predominantly to a narrative form"[77]

Almost all machinimas are short films. There are only a few examples of feature length machinimas.[78] Despite the shortness of the films, there are also series being produced. One of the reasons for the short length is probably that machinima productions are – apart from a few exceptions - spare time activities.

2.8 Machinima – Limits and Potential

> "The greatest attraction of machinima is that starting is so easy. It is not necessary to invest in expensive tools or equipment to create high-quality film; given a reasonably up-to-date computer, you can set up the rest of you virtual film studio for next to nothing."[79]

This is one of the most popular arguments for machinima.[80] Nevertheless I do not believe that this is the main attraction. There are a lot of different animation techniques which are equally or even less expensive. The real reason

[77] Nitsche 2005:228

[78] Hancock called 2007 the year of the machinima feature film. Four feature films where produced in that year. (Hugh, Hancock: Machinima for Dummies : Machinima in 2007, part 1 - Feature Films and Community Breakdown (Website))

[79] Kelland 2005:74

[80] Another example can be seen in Lyons 2004:32 where he lists saving of money and time, flexibility, collaboration and popularisation and democratisation as the main benefits of machinima.

why machinima is so popular and easy to use can be found in its game-culture background. There is almost nobody who sets up a fast computer with a game with the intention to make machinima. Instead, the common scenario is that of young and creative people sitting around in front of their computers playing games. Therefore they already have everything to make a machinima. One of the aspects of playing is to explore the limits of the rules, in this case the limits of the computer games. Some people get bored and just play another game but some people are really interested in how things work. They start to play around and maybe come to a point where they start to make modifications to a game, create levels or make machinimas. Everything is there for an easy start. Some games even have functions to do this like **The Sims 2**. In comparison to more traditional animation techniques, e.g. cel animation or stop motion, first results can be achieved very fast. The immersion in the activity[81] can therefore be much more similar to the one in computer games than the one in other animation techniques.

In addition to that the internet also plays an important role. Information and knowledge can be found and other people's work can be seen. If someone wants to start something new, he or she can find tutorials in the internet to nearly everything. So the internet can be seen as a learning platform but also as a community. There are a lot of ways to share one's own work and to watch other works. Both things can be the source of great motivation.

> "While an individual machinima work does not need the internet, I would suggest any understanding of machinima in relation to convergence would be inadequate without considering the role of the Web in the development of the form."[82]

Machinima, as an easy to use medium to create content, can be seen as a part of the process of democratization through internet and affordable technology. In this respect, machinima is comparable to live-action video. A lot of people can make videos with cameras, photo-cameras or even mobile phones and post them on video-platforms. Machinima is another wheel in this process.[83]

Leo Berkeley stated that machinima shows a blurring between producers and consumers and refers to the importance of prosumers[84], proams[85].and produsers[86].[87]

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[81] More about immersion, agency and flow in chapter 4.

[82] Berkely 2006:68

[83] However, this is oversimplified, as there are also rightful positions that digital media is not in itself democratizing (Aarseth 1997:166-168).

[84] Deuze 2005

[85] Leadbeater 2004

[86] Bruns, Axel: Some Exploratory Notes on Produsers and Produsage (Website)

[87] Berkeley 2006

As an example of this social process one well known machinima is named very often: **French democracy**. This machinima is about the French riots in 2005.

> "The story behind its creation shows us that community players—players who create and circulate game-based performances within communities of game players—can contribute to public discourse about current events."[88]

> "The example of Koulamata's "The French Democracy" suggests that game-based moviemaking is capable of empowering a variety of age groups as moviemakers."[89]

The different techniques of making machinimas also help to make machinima suitable for different personalities and skills. There can be the computer programmer coding a scripted machinima, the one-man team shooting an AI machinima or there can be a group of people playing networked games producing machinimas with virtual puppeteering.

Virtual puppeteering offers even more advantages in another field: Live performance. One of its main benefits is that with virtual puppeteering a new way evolved which is not like any other production processes for animated film. It can of course be compared to theatre or classical puppeteering but it is not the same. Also, the machinima makers have a very different background compared to the one from puppeteers. Virtual puppeteering is probably one keystone of machinima that has some potential. It is fast and can be done live.

Even if machinima is not done live the real-time possibility offers great potential in many ways. Of course the production times can be much faster but it also gives more freedom to explore how to do certain things. The makers can try different solution in different situations. This could also be used for the teaching in film and animation classes. Another great use of machinima is the use for animated storyboards or animatics in the production process of a live-action film or an animation feature.

Another aspect is that the self-referencing machinimas bring social processes of self-awareness in the culture of computer gamers. The dealing with computer games and the public discussion about them is very one dimensional and should be more diverse. Machinima offers the opportunity to explore games from another perspective - not only for the gamers, but also for the public and media.

The referencing of machinima to computer games is probably also one of the biggest reasons why people are interested in watching them. It is as an art form inside the computer game culture and people are interested, because

[88] Lowood 2008:165
[89] Lowood 2008:166

they are part of this culture. Or as **Clive Thompson** from the **New York Times** puts it:

> "More than just a cheap way to make an animated movie, machinima allows game players to comment directly on the pop culture they so devotedly consume."[90]

The close relationship with computer game culture is also a reason why it is so difficult for machinima to move away from the games in which they are produced. To set machinimas free from the computer game world in terms of content, a huge effort in the production of original content like graphics, models, animations, sounds and music would be necessary. To move away from the world of computer games would also imply the loss of reference and therefore a new audience would be needed. Machinima would have to make a big jump to be a medium in its own right, with its own aesthetics, styles and qualities and to receive recognition outside of the computer game culture.

Friedrich Kirschner puts it a little bit more directly in his **Machinimag**:

> "For people who have grown up in gaming, it might be pretty and beautiful to see some Quake models running around with weapons in their hand, shooting each other's brains out. For people that have nothing to do with games, it certainly is not."[91]

The strong affinity to the game is the origin of machinima but also the fate for most machinimas. To break away from the game, the limitations of the engine and the content have to be resolved. To do this often implies to erase the benefit of fast production times. It is noticeable, that the curve to professional machinimas gets quite steep after the easy beginning.[92]

Some machinimas tried to neglect the origins of their game but they failed to achieve much popularity outside the world of computer gamers. Some people think the lack of money is what prevents machinimas to make the jump– money that nobody seems to have invested so far.[93]

After all, for the uninvolved viewer in general machinima does not look as good as other forms of animation but as long as there are computer games there will also be machinima. And because of the development of computer games and computer hardware they will get better and better. But will machinima set itself apart form its game origins?

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[90] Thompson 2007

[91] Kirschner, Friedrich: „Now, what is machinima." (Website)

[92] Hancock states that the feature-length machinima Bloodspell took 10.000 man hours to make. (Hugh, Hancock: BloodSpell Development Updates - BloodSpell and Hollywood (Website))

[93] There are commercial machinimas, but they are not in any way comparable to a worldwide release of a feature film.

It seems as if the visual effects and animation company **Digital Domain** has evaluated machinima for its productions. On the **Game Developers Conferenc**e in 2008 they stated the following challenges for machinima:

> „- render quality
>
> - determinism (create the same event EXACTLY again, keeping certain aspects while modifying others)
>
> - filmmaking tools (more camera control, better editors are needed)
>
> - animation (e.g. advanced character animation)"[94]

Three of these factors are directly concerning the visual quality. I will discuss theses issues later in this chapter.

The quotation above reveals another problem. At least the points "filmmaking tools" and "animation" show that the approach of filmmaking with 3D game engines is still experimental and therefore the right tools, software or functionality are often not provided.

> "It's important to work outside of a comfort zone, in order to test out new ideas… Game engines presented a new challenge. On one hand, they allowed our team incredible flexibility. We could change lighting, camera angles, and textures on the fly, in real-time, rather than waiting overnight for the data to render. On the other hand, we were using the engines to do something that they were not originally designed to do. We spent a lot of time tweaking the code, making changes that would allow us to bring film language into a gaming environment."[95]

There is another movement that will probably be more and more important as time goes on - 3D animation is a huge market and there are a lot of profitable films produced with this technique. The power of computers is steadily increasing and the possibilities in the production processes with them. While working with 3D software you see 3D models and animations in real-time. Every current 3D software has this function. The quality of the displayed image is reduced by different options. The more power the computer has, the more quality can be shown before a dedicated rendering process is started. Because these real-time possibilities will get better, they probably will be used more and more in previsualisations. Maybe some day 3D animations will be played in real-time for productions which are not leading edge. This could be

[94] Nitsche, Michael: Free Pixel » Machinima at GDC 2008 (Website)
[95] Cited from Lyons 2004:24. The original online resource is offline.

imagined for live TV-Shows or low budget animation series. This production process could be called machinima but would have evolved even if there would not have been a machinima culture.

It is unusual that the machinima culture has defined a medium and is not involved with the production of the software they use. The machinima culture is dependent on other industries which have the financial power for research and development. Even though machinima is mainly using computer games, there is a parallel development of real-time 3D environments at least by four groups: 3D animation software, computer games, software for real-time visualisations[96] and, even if small, the demoscene.

2.8.1 Searching for Quality

To evolve machinima from being a medium solely used within a subculture, there would have to be machinimas with a non-game referencing story and an overall quality that is able to compete with other forms of filmmaking. At least there would have to be a story which is understandable outside a certain game community and a coherent aesthetic concept. It is technically immanent that the rendering quality of real-time engines will always be behind the non-real-time 3D rendering. Not only the rendering quality is a problem for machinima today, there are other things that lack too. I want to present two well known machinima examples to point out a few things. Mostly I will describe my personal opinion about them supported by other commentators.

2.8.1.1 Bloodspell

Hugh Hancock is one of the important machinima gurus. He founded **machinima.com** and has made several machinimas. In 2007, he released the feature-length machinima **Bloodspell**. He claims that **Bloodspell** is the "biggest Machinima film ever ".[97] One reason is that it took over 10.000 man hours to make it. The film received good feedback form inside and even some from outside of the machinima community.

Apparently even having several thousand viewers is probably not good enough for a feature film which can be watched for free. It seems that machinima still has problems because of the game aesthetic but also because of common low-budget film diseases.

I want to cite a few comments from a website:

> "Watched the first few minutes. Wasn't that impressed. I can appreciate their hard work and I love machinima conceptually, but the story was to [sic!]

[96] For example VVVV and Processing.

[97] Hugh, Hancock: BloodSpell Development Updates - BloodSpell and Hollywood (Website)

> convoluted and contrived for me to watch the whole thing (that and the Neverwinter engine looks pretty terrible nowadays)."[98]
>
> "Watched 2 segments of it last night. The story gets a bit better in the 2nd segment, but the whole thing reeks of cheapness.
>
> I'll probably watch a bit more to see if I get into it, but the rubbish engine, crap lip syncing, poor voice acting and ridiculous use of music really put me off."[99]

The problems cited here are typical for machinima. The sound quality is often poor and the lip syncing seems wired and unnatural. This is probably the consequence of a low budget. The visual aesthetic of computer game engines is a problem I already pointed out. To sum this up, theses problems mostly occur because of the current constraints of machinima.

There are other downsides to this film which could have been avoided. There are a lot of long camera tracking shots which seem to be included only because they are possible to achieve within a game engine. The music is badly mixed and does not suit mood and story. The story is not transported well through acting and dialogues. The dialogues are often unnatural and stiff where they could have been used to give the dead-looking visual appearances of the characters more life.

After having analysed the weaknesses of the film, it is not clear, why this genre and story was chosen to produce a feature-length machinima. It seems as if they are trying to make a great epic Hollywood-like fantasy film and only changed the style in some parts to the worse, such as the use of punk rock music for instance. Why did they chose this genre and invested so much time and talent if machinima just does not look good enough to make an impact? One of the reasons could be that machinima enables the use of magic and action and camera movements which would not be possible within a low budget live-action film production. They simply use these features because they can, even though they might not necessarily look good.

I think this a point where machinima still has to define itself and where it has to find its own style and strong elements. Nevertheless for the successful development of machinima, a project like **Bloodspell** will probably be a milestone. Even if I find the film not compelling and peppered with teething problems, there are people who enjoy watching **Bloodspell**. I appreciate the hard

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[98] Strangelove: Comment to "Holy Hell, That's a Long Machinima: BloodSpell" (Website)

[99] hahnchen: Comment to "Holy Hell, That's a Long Machinima: BloodSpell" (Website)

work and the effort of **Bloodspell** and will therefore conclude with two more positive statements. One from another commentator on a website:

> „There's some damned fine storytelling and editing/production work here -- machinima is still finding its legs, discovering what it's for, and the Strange Company folks are at the forefront of using the medium for feature-length drama, really getting beyond short comedy pieces.“[100]

The other comment reveals the reason behind some of the features of **Bloodspell** that I personally do not like. It also shows why respect is due to the makers of **Bloodspell** as an experimental attempt to search for a machinima style.

> “Hugh Hancock is deep into the final throes of production on his first feature-length movie, BloodSpell. He has been mulling over this project since late 2003, after a collaborator said his work had lost that "punk edge". His response was to make a movie that defied most of the rules of traditional film-making. BloodSpell isn't even cinema - it's machinima. And as a result it is billed as "a truly independent, zero budget, animated action-adventure feature film, combining the irreverent, aggressive, DIY ethos of punk with the epic scale and power of fantasy".”[101]

2.8.1.2 Lit Fuse Films

The machinimas produced by **Lit Fuse Films** are visually very appealing. The limits of machinima are still noticeable, but the flow of camera and editing, the post production, the music and sound are working as a whole. Therefore the computer games origins of these films do not distract the experience of watching them.

A lot of the visual quality has to do with two things. For the newest machinima **Ignis Solus** they used the very new game **Team Fortress 2** released in the last quarter of 2007. This engine includes remarkable tools for lip syncing and facial expressions. Also, the rendering style of **Team Fortress 2** is a bit comic-like which sets the visual style just right for the story in **Ignis Solus**. In addition to the leading edge engine, they use software like **Adobe Premiere Pro**, **Adobe After Effects** and **Sony Vegas** for the post production. The visual quality is enhanced by colour correction, the use of post processing effects and additional camera movements.

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[100] Doctorow, Cory: Part one of machinima epic "Bloodspell" online under CC license - Boing Boing (Website)

[101] Krotoski 2005

One of the best things they do in their films is actually to keep certain things out of them. There are a lot of things that are quiet hard to achieve with machinima. A lot of emotional expressions, complicated movements and physical interactions are difficult and sometimes impossible to make. To not present them in the awful way they are at the moment is often the best thing to do. **Lit Fuse Films** is great in showing what the engine is capable of and keeping out what the engine is not capable of.

A comment in a community forum puts it like this (The commentator is referring to the main character as the pyro and the level with 2_fort.):

> „A simple, yet effective film about both curiosity and the desire for companionship.
>
> What's really interesting is how the elements all came together. The detailed design of 2_fort allowed for the pyro to continually seek out and discover the insignificant objects of the map, that we often ignore. Also, the use of the pyro for this video was a key choice in that the viewer can't directly understand what the pyro is saying (due to the muffling of his voice) or feeling (due to the covering of his facial expressions). Yet, despite the obvious gaps in communication between the pryo and the viewer, the viewer is still able to get an idea of what the pyro is thinking and feeling through his interactions with the world and the other player.
>
> Finally, the music brings it all together as a soft and soothing song, yet riddled with slight moments that give a feeling of mysteriousness about the world.
>
> Definitely a very well put together film."[102]

Although **Lit Fuse Films** uses the content of the game, they create films which can be interesting not only to the players of that game. They are, nevertheless, strongly limited by the games content.

2.8.1.3 Cinematic Factors

Is there a reason why the visual appearances of machinimas are considered to be unpleasant by some viewers? A lot of the limits in the game engine are set by computational power but also by the lack of importance to make beautiful enemies. Nowadays this is changing, but most gameplays where like that: If you see a creature, shoot at it because it is an enemy. The design, modelling and animating was strongly affected by that.

[102] JoeshieB7: "Ignis Solus" -- First Fan-Made TF2 Machinima? - Page 2 - Steam Users Forums (Website)

Also today where most render engines try to get as close as they can to photorealistic renderings, the situation has not changed much. There is one approach that is commonly stated to be used by animation studios like **Pixar** which explains why it is not necessarily best to achieve maximal realism: The hypothesis of the uncanny valley. This hypothesis was formulated by the roboticist **Masahiro Mori**.[103]

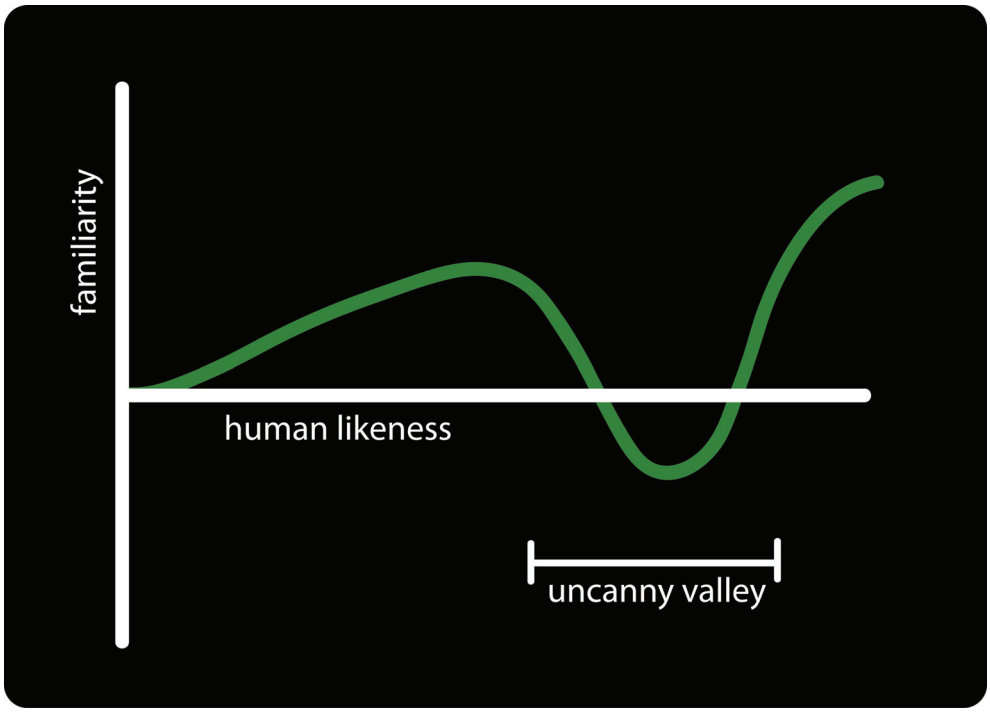

Figure 1: Uncanny Valley

As figure 1[104] shows, if the appearance of something gets too close to a human likeness there is a point where it is not received well by the viewer. There are different explanations for that paradox. In the case of a digital character, there is a point where the digital character is not seen as an abstraction of a human being anymore, but as a human character with flaws. At this point, the opinion about this digital character will become focused on these flaws. **MacDorman** explains that there is a hypothesis that this arises from a fear of death.[105]

At the **Indiana University** an evaluation of machinima platforms for the use of machinima for video prototyping in the field of HCI (Human Computer Interaction) was done. One of the conclusions was:

[103] Mori 1970

[104] The figure is a simplified version of the one used in the translation of Mori 1907, which itself is a simplified version of the original one.

[105] MacDorman 2005

> "A deeper problem is that none of the platforms we tested deals well with facial expressions or human emotion."[106]

This is a great problem for machinima makers. The animation of characters in 3D computer games is mainly focused on the two main actions: move and shoot. But even for these main purposes there are not enough types of animations for a film. In the movement category there are normally a few basic forms such as sneak, walk, run, jump, and sidesteps. There are no move-animations which expresses the emotional state of the character. For example you cannot see from the way someone moves if he or she is cautious, frightened, shy, tired or confident. On the side of the complexity of facial expression the situation is much worse.

This lack of animations is due to the fact that computer games do not need them as much as machinimas do and therefore computer games are produced with only the most necessary forms of animation. Therefore, if a machinima maker wants to show common occurrences, even without any specific emotional state, he or she would have to make major modifications. Creating a character lifting a cup of coffee and starting to drink or two characters kissing each other would be an enormous challenge.[107]

Machinima also lacks in story quality, especially if the long tradition in live-action film history and in the field of animation film is considered. Even simple things like the use of approved work processes could be of help not only for the story but also for other parts of the production.

A typical process for animation produced for television from the book **Writing for comics, animations & games**[108]:

- Development
- Script
- Voice Recording
- Storyboards
- Backgrounds and Character Design
- Animatic
- Animation Production
- Postproduction

Of course, this process has to be adjusted to machinima but most of it can be transferred directly. I will not discuss these issues and the issues of story writing here because there are a lot of books already covering these topics. To use the knowledge from traditional animation films is an important step for

[106] Bardzell 2006

[107] Although some games come with an animation for kissing, this does not come close the emotions of a real (respectively recorded) event. And even if it did, many variations for different situations would be needed.

[108] Marx 2007:27-28

machinima. There is most certainly a lack of preproduction in a lot of machinima productions today.

Machinima has several limits and also several potentials, but machinima could improve if its makers learned from the existing knowledge of art forms such as cinema or theatre when trying to make animated film.[109]

As stated above, machinima is an easily available opportunity for people to produce films. With the potential of many people trying to produce great films, there will be - and there already are - people who use their skills and knowledge to produce artistically new and valuable works in the field of animated films.

At moment, machinima, if regarded as a form of making animated films, does not compare well to normal 3D animation, and there is no reason why this should change anytime soon. **Youngblood** already stated in 1970 that "real-time photography is not of crucial importance in the production of aesthetically-motivated films."[110]

2.8.2 Machinima's Interactive Potential

One of the great qualities of machinima is the real-time rendering. This is mainly used for fast and new production processes with virtual puppeteering or in-game documentaries. Despite a few examples of live performances and shows, there is no great use of the fact that the advantage of using a real-time environment is the ability to react to input during the viewing of a machinima. The need to react on input immediately is actually the reason why computer games are using real-time engines in the first place.

The fact that viewers who are non-gamers do not care if a film was made with machinima or is a longsome rendered 3D animation is why machinima has to look better than it does at the moment. If the real-time character of machinima was used during the reception or the performance, the expectation of the viewer could be different.

Parallel to the use of machinima to make linear films, some niches could be taken by the technology that underlies machinima. In fact, there have already been some works in this field. I will present a few of them.

2.8.2.1 Live Shows and Performances

One of the first well known examples for the interactive use of machinima was **Common Sense Cooking with Carl the Cook** by **ILL Clan**. In 2003, they performed live at the **Florida Film Festival**. The show "was cre-

[109] Some people like Hugh Hancock already wrote articles about how to create machinima with borrowing knowledge from film. (Hugh, Hancock: Gamasutra - Machinima Cutscene Creation, Part One (Website)) (Hugh, Hancock: Gamasutra - Features - "Machinima Cutscene Creation, Part Two" (Website))

[110] Youngblood 1970:198

ated in front of the live festival audience, where they solicited suggestions from the crowd to work into the film's story line."[111]

This Spartan Life is a talk show by **Chris Burke** distributed over the internet since 2005. A guest is interviewed inside the virtual environment and because this takes place inside a normal online game of **Halo**, it is possible that host, guest or camera operators are attacked by players who are unaware of the situation.[112]

In 2005, there was also a German machinima show initiated with live shows at several occasions. **The Bob Block Show**[113] was created by **Friedrich Kirschner**, **Klaus Neumann** and **Alexander Scholz**. They controlled Bob and his guests with gamepads and later on also with other devices. The lip syncing was simply done by detecting the volume of the speech.

These three shows are examples for something that cannot be done without a real-time 3D virtual environment.

I already mentioned the live performances from **glaznost**, **Daniel van Gils** and **Alexander Koller** earlier. The latter uses the 3D engine **Virtools** to produce live visuals. He built himself a tool to be able to control 3D visual in a live situation.

> "It was great to have found software that enabled me to built [sic!] what I had dreamt of: an interactive 3D real-time tool that is intuitive and that gives me full control over the design of the visuals."[114]

Another example of using a game engine is **Ein kleines Puppenspiel** by **Friedrich Kirschner** which I also described earlier.[115]

2.8.2.2 Interactive Storytelling

Scientists in the field of interactive storytelling also use games. The use of a configurable computer game engine is often perfect for testing intelligent systems.

> "The Mimesis system integrates AI control with off-the-shelf commercial games. The benefit of this approach for AI researchers is both immediate; use of systems like UT provide readily accessible, stable and high-quality graphics, networking, database and process execution support for virtual environments, elimi-

[111] Marino 2004:18-19

[112] Nitsche 2007

[113] Kirschner, Friedrich and Neumann, Klaus and Scholz, Alexander: blockspot.net - Die Bob Block Machinima Show (Website)

[114] Scholz 2007:34

[115] Kirschner 2007

> nating the need for time consuming development of these components in a research project."[116]

With the use of game engines for interactive storytelling even new fields of research emerged:

> "Current 3D game engines offer the potential for new types of interactive storytelling. In this paper, we discuss automated cinematography as it relates to interactive narratives in virtual worlds."[117]

> "Machinima is a low-cost alternative to full production filmmaking. However, creating quality cinematic visualizations with existing machinima techniques still requires a high degree of talent and effort. We introduce a lightweight artificial intelligence system, Cambot, that can be used to assist in machinima production."[118]

More and more people are using game engines to visualize their efforts in the field of intelligent storytelling systems.[119] There are also scientists providing modifications to use engines in a panoramic theatre or CAVE (Cave Automatic Virtual Environment).

> "CaveUT is a set of modifications to Unreal Tournament that allows it to display in panoramic (wide field of view) theaters. The result is a useful tool for educational applications and virtual reality (VR) research."[120]

For example **CaveUT** was used for a research project to create an immersive and interactive version[121] of **Madame Bovary**[122].

CaveUT is not the only example. There is also **ARQuake**[123] and **QuakeRunner**[124].[125]

2.8.2.3 Visualisation and E-Learning

In the beginning of machinima demos were not only used to simply demonstrate the makers' own skills, but also to communicate techniques and

[116] Young 2001
[117] Amerson 2005
[118] Elson 2007
[119] For example: Magerko 2003, Szilas 2007 and Charles 2007
[120] Jacobson 2002:39
[121] Cavazza 2007
[122] Flaubert 1856
[123] Piekarski 2002, Thomas 2000 and Thomas 2002
[124] Faust 2003
[125] As mentioned in: Charles 2004

therefore to teach. New players learned how to play skilfully by examine the style of play of a skilled player.

Henry Lowood cites out of a mail from the **Doom** demo scene veteran **Laura Herrmann** alias **BahdKo**:

> "Use of demos for their educational value has been going on since almost the beginning."[126]

Recently, there have been attempts to use machinima for education: There is a machinima class in second live[127], there is going to be a German machinima workshop dedicated to teachers and e-learning developers[128] and **Diane Carr** is listing some more examples in her article **Machinima and education**.[129]

There is also a scholarly attempt to apply the insights of process drama, like role distance and role protection, to the development of machinima.[130] Especially the ability of replays and variable repetitions could be of use for educational purposes. An obvious example would be the use in teaching film language.

The use of machinima for previsualisations, animated storyboards and animatics has already been addressed,[131] but there are also other possible uses of game engines for visualisations, for example in architecture.[132]

2.9 Machinima Defined

I want to get back to the beginning of this chapter. To introduce machinima I used a definition by **Paul Marino**. He described machinima as a way to produce animated films "within a real-time virtual 3D environment."[133]

This definition is a good start to explain what machinima is. It is also probably the most commonly found definition. Before I go on and examine

[126] Lowood 2008:173

[127] Carr, Diane: Teaching Machinima (Website)

[128] Dounau-Universität Krems: Machinima Workshop (Website)

[129] Carr, Diane: Futurelab - Resources - Publications, reports & articles - Web articles - Machinima and education (Website)

[130] Carroll 2005

[131] There is a list of film studios which licensed the Unreal Engine for CG animations on Wikipedia (Wikipedia: List of Unreal Engine games - Wikipedia, the free encyclopedia (Website)). The list consists of big studios such as Warner Brothers, Buena Vista, Sony Pictures Entertainment, Columbia Pictures or TriStar Pictures.

[132] Scheiblauer 2004

[133] Mariono 2004:1

this definition, I would like to present some other definitions, mainly following the thoughts of **Michael Nitsche**.[134]

The **Academy of Machinima Arts and Sciences** describes it as follows:

> "In an expanded definition, it is the convergence of filmmaking, animation and game development"[135][136]

This quotation includes games. Several people do this in their definitions. **Michael Nitsche** writes:

> „Machinima is a technique that relies on the use of 3D game engines to generate cinematic interpretations of performances in virtual worlds. It is rooted in the gaming community and the interactive access that is part of the games' nature but it also applies cinematic language."[137]

And he continuous:

> "Machinima is a production technique that relies on the images created by real-time 3D engines such as computer games to create cinematic pieces of computer animation"[138]

In another article he wrote:

> "Machinima is a video production technique that uses real-time graphic engines, such as video games, to generate moving images."[139]

So it seems that the relation with games is an important factor. **Henry Lowood** even explains the definition by **Paul Marino** like that:

> "This means producing animated movies with the software that is used to develop and play computer games."[140]

I assume that **Paul Marino** left out the computer games because he wanted do define machinima as a real-time technique comparable to other

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[134] Nitsche 2005 and Nitsche 2007

[135] Academy of Machinima Arts & Sciences: What is Machinima? - The Machinima FAQ (Website)

[136] See also what the co-creator of the term machinima thinks about it in 2008: Bailey, Anthony: Words respond to need (Website).

[137] Nitsche 2005:210

[138] Nitsche 2005:211

[139] Nitsche 2007

[140] Lowood 2008:165

techniques such as cell animation but the relations to computer games are too strong for this term to get over them.[141] There are other possibilities which enable the production of animated films with real-time engines. I mentioned some software for this purpose earlier, e.g. **VVVV**, **Autodesk Motionbuilder** and programs of the demoscene. This shows that unless the term machinima is accepted by other groups **Paul Marino's** definition is simply too broad.

Michael Nitsche is even questioning his own definitions as he writes:

> "Is machinima an expression of the game or a game-enabled cinematic technique? There is no single answer to that, which is why machinima remains an exciting and rather flexible field with a lot of creative opportunities."[142]

As machinima cannot only be described as an animation technique, its origin and its culture have to be considered important for a definition:

> "Machinima evolved not as a clearly industry-defined media format but from the practices of an underground art production that playfully embraced any media format that offered itself for their artistic practice."[143]

This leads to the following question: How can machinima be described beyond its technical possibilities of filmmaking? **Katie Salen** sees machinima in a triangle of theatre, film and videogame.[144]

In **Machinimag Ahmet Emre Acar** was interviewed who wrote a Diplomarbeit[145] about machinima.

> "The most precise classification of machinima would be that of an art movement as there are may [sic!] parallels to that. It is not "game based performance", "virtual puppetry" or an "artistic game modification". I found current definitions to be imprecise or plainly wrong. At this point of time, it is not possible to identify machinima by means of production, since other game based media such as speed runs, trick movies and frag movies would also classify as machinima movies. An asthetic description is impossible as there

[141] This connection can also be seen in machinima's history. When Quake III Arena was released, the network code was protected to prevent cheating. This made it difficult to produce machinimas with it "and hence the amount of productions slowed to a crawl." (Marino 2004:11)

[142] Nitsche 2007

[143] Nitsche 2007

[144] Salen 2002

[145] Acar 2005

> is no "aesthetics of machinima" yet. Maybe the community will be able to develop a unique visual language in time"[146]

So besides the fact that a definition of machinima would have to include the relationship to computer games because other real-time techniques cannot simply be included in the term machinima, **Ahmet Emre Acar** even goes further by saying that not all the machinima makers themselves recognise the term.

> "As I said, machinima is a movement, not a medium. The members of the movement seem to have different (sometimes contradictory) goals and ideas. The fact that gamers outside the community produce their own (narrative) movies without introducing them to the machinima movement indicates a lack of acceptance of "machinima" as a terminus for game movies."[147]

So in a way machinima can be seen as a term formed by a certain group of game filmmakers to give a name to their works and their technique. I personally find this description too harsh, as the people who formed and are using the term machinima are somehow the speakers and lead figures of "game movies".

Nevertheless it is a really difficult case because some "game movie" makers do not even know about machinima. If someone records his screen while performing in a computer game, he does not have to know anything about machinima. There is also a noticeable separation between practicing machinima makers. The community is divided because of the different computer games they are working with.[148]

Another problem is also to distinguish between playing and performing. Am I already making a live machinima performance when I am playing a game and some friends are looking over my shoulder? And if not, why are live shows created with computer games called machinima, although they are not films? Or am I producing a machinima as soon as I stop to follow the goal of the game and start to perform? This would lead to the conclusion that machinima is enabled by the player's freedom. The freedom between the different rules of the game stretches so far out that he can do things which have nothing to do with the actual goal of the game.

Why are cut-scenes not simply called machinima? Does this not make machinima a fan-culture because it excludes professional productions such as cut-scenes? And why is it important to limit machinima to 3D? If I recorded a

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[146] Kirschner, Friedrich: "machinima will cease to exist" (Website)

[147] Kirschner, Friedrich: "machinima will cease to exist" (Website)

[148] See also: Hugh, Hancock: Machinima for Dummies : Machinima in 2007, part 1 - Feature Films and Community Breakdown (Website)

session of me playing **Tetris** would that not be some sort of machinima documentary?

I raised many questions here and I have one left for this chapter: Can I clearly answer these questions? No.

Machinima is a growing term. It evolved and will evolve. It is not strict in saying what it includes and what it does not. What is important is that if you think of machinima do not just think about a technique or an animated film but also of a culture, computer games, of creative use of technology, an art movement and of consumers becoming producers.

2.10 Heading towards...?

So if machinima has grown out of the activity of some gamers, where is it heading now? There are a lot of different opinions about this and I will try to sum up a few of them.

First I want to begin with some great expectations:

> „The ability to produce low-cost CG movies using real-time animation has the potential to blow the conventional animation production methods and their subsequent genres apart, just as the non-virtual tools in digital film revolution (DV cameras and non-linear editing systems) have affected live-action filmmaking."[149]

> „What started as simple fun by a few video game aficionados to manipulate the actions and create stories around characters in games such as Quake, has now transformed into a full blown underground film industry with its very own association and film festivals."[150]

> "Machinima's the new kid on the block so it has yet to prove itself. If game technology moves forward at the pace I believe it will, machinima will revolutionize animation. Like CGI [computer graphic imagery], machinima will have a place in animation history. We will have CGI, stop motion, claymation, anime, and ma-

[149] Hanson 2004

[150] Pasha, Shaheen: CNNMoney - Independent film makers see market in machinima (Website)

> chinima as the primary styles of creating animated features if you're not into traditional cell animation."[151]

At this moment in time, all these statements seem to be a bit too exaggerated. In order for machinima to become a professional animation technique, there has to be taken care of a lot of the problems which I already pointed out. So there are also critical statements as the one below by animator **Mark Behm**:

> "I can see a real use for real-time playback in some cases. But I think the point many miss is what one gives up. Not just the pretty picture, but the power, the emotion, the richness, warmth and believability of the film. As far as being a threat, I don't see one at this time. PIXAR, and many others, probably could make films at half the cost, but aren't willing to give up what they would lose if they did"[152]

So what is going to happen in this spectrum of possible futures? As computer software and hardware and especially computer games will get better and better, machinima will automatically evolve. More unclear is the future of dedicated machinima software like **Machinimation** or **Moviestorm**. Basically, a scenario could be imagined in which three things move closer to each other and will maybe finally melt into one: game engines, machinima software and common 3D animation software.[153][154]

But as I stated already in the previous chapter, machinima cannot only be seen as a technique and therefore it cannot be judged by its visual quality or effect on the film industry alone.

> "Overvaluing "serious" goals as an end point of the creative use of entertainment technologies leads to an anachronistic, even Whiggish justification for these uses of technology: the value of those activities then is seen through a lens that only shows us their recontextualized value now."[155]

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[151] From an interview with Katherine Kang which is not online any more. Cited from Lowood 2007:75.

[152] Biever 2003

[153] In some way Paul Marino already suggested this in 2004: Marino, Paul: O'Reilly -- Machinima: Filmmaking's Destiny. (Website)

[154] ILM (Industrial Light and Magic) is working on a project internally called Zviz. Zviz is a tool for previsualisation that is integrated in ILM's production pipeline and is also using a Lucasfilm game engine to display graphics. This seems to be one of the possible future developments for the professional use of real time environments. (Robertson, Barbara: Zviz: ILM Goes Interactive with Previs (Website))

[155] Lowood 2008:168

Henry Lowood sees more in machinima than what he calls serious goals. Machinima also illustrates the DIY culture for modifying game technology and using computer games for animated filmmaking. Filmmakers use this new technology to express themselves.[156]

Leo Berkeley also concentrates more on the process of creating a machinima than on the final work.

> "I argue that one of the most distinctive features of the form is not apparent in the finished work but occurs during the production process, where the user/filmmaker can interact with a programmed game environment that is sufficiently complex to have substantial elements of uncertainty and randomness structured into the gameplay experience. This creates a filmmaking approach that is located within a documentary or improvised drama model not normally associated with animation production, an approach that offers some distinctive new possibilities for creative audio-visual narrative production."[157]

This statement does not include all different machinima techniques such as scripting and it somehow implies that machinimas are improvised. But what is important here is that the process of creating a machinima is important to the medium. Virtual puppeteering is a very important part of machinima as it consists of acting within a virtual world. This makes it unique as a technique for animated film. Also the AI technique is new because it is shooting with virtual actors.

Michael Nitsche identifies another important feature of machinima:

> „Although the most prominent commercial successes so far are found in the 'reel' Machinima type, the 'live performance' examples demonstrate the easy access to forms of interactive storytelling that were confined to exclusive high-tech labs before the advent of Machinima. They not only show the spreading of the technique into different professions and communities but also a range of future applications for Machinima."[158]

So it is possible to see the importance of machinima not only as a competition for other animation techniques but also in other uses that could not have been possible before. This is what I am interested in: The area of tension between game and story that created machinima and the use of interac-

[156] Lowood 2008
[157] Berkeley 2006:66
[158] Nitsche 2005:227

tivity not only during the production process but also in the presentation. Machinima is based on the fact that the rules of the games gave enough freedom to play in ways the game developers had not imagined. I want to use this creative space and play with machinima's possibilities.

3 Narrativism and Ludology

Story, game and interactivity are terms which are widely used and discussed. The broad generalization of these terms in scientific and non-scientific fields made it difficult to narrow them down to a simple definition. An explanation for this generalization could be that behind these terms are fields of concepts which grew throughout human history. Therefore it could be more suitable to approach theses terms through pattern recognition and not through condensed and logical descriptions such as definitions.[159]

Chris Crawford put it this way:

> "I can't specify the structure of stories, but I can point out that even a four-year-old child has a solid grasp of the concept of story."[160]

Following this line of thought he comes to this conclusion:

> "Stories are complex structures that must meet many hard-to-specify requirements."[161]

What I want to do in the following chapter is to discuss the important concepts behind these terms. I will try to separate story and games and in the end I will present one or several definitions for each important term. As mentioned above these definitions are not set in stone, but they will provide some clarity for this thesis.

As **Craig A. Lindly** mentioned:

> "[…] the terms do not have any absolute meanings and the boundaries between complex phenomena are generally vague."[162]

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[159] Wittengenstein used the word "game" as an example to explain his idea of family resemblance. (Wittgenstein 1953)

[160] Crawford 2005:14

[161] Crawford 2005:14

This discussion is very important for my work. It is the starting point for a theory on which I will base my concept. To discuss what a story, a game and interactivity is, leads to some sort of understanding of their roots, concepts and features.

In machinima, both the concepts of game and story are important. To know the relationship of these in regards to machinima, they have to be described separately. Especially when I want to investigate the interactive potential of machinima it gets even more complicated. The idea is to divide story and game and then to ask the question: How could they be used together?

Finally many questions arise: Are machinimas a mixture between games and stories? Or has machinima nothing to do with games any more? How does a game influence the story? Can a story influence the game? Underlying these questions are even more fundamental ones, for example: Is a game maybe just a type of story?

3.1 Interactivity

Before I come to the core of discussing the relationships between story and game, I want to say a few things about interactivity. After all, interactivity is an important factor in this discussion.

A very clean and simple definition of interactivity could be this one:

Interactivity is the concept of actions causing reactions.

Even if I think that this definition fits very well it would lead to a problem if we do not take a closer look at on the elements which are interacting. It is physically impossible that there is any action which does not have some sort of reaction. Therefore we have to mention what exactly we mean if we use the word interactivity.

> "For example, take this book [a thesis in my case] you're holding. Can you really say that the experience of reading it isn't interactive? Aren't you emotionally and psychologically immersed? Aren't you cognitively engaging with language itself to decode the signs of the text? And doesn't the physical form of the book and your understanding of its contents evolve as you interact with it? Yes and no."[163]

Let us take a look at interactivity where it is most misused: the human interaction with a computer. If we read a story on our computer screen and use

[162] Lindley 2005:154
[163] Zimmerman 2005:457

a "next" button this is, of course, interactive but if we read a book and turn the page this can be called interactive too. If we look closer on the interaction provided by computers, most of the time it is a certain feature which leads to a point where the interactivity matters. I want to present an example: A choose-your-own-adventure-book and a simple hypertext story with a branching system can structurally be the same, but the computer finds the next part a lot faster than anybody can turn pages. Some of these simple features have changed the way we use media.

Some people tend to use a narrower definition for their needs. **Greg Roach** wrote that interactivity is "an input-response exchange between an [sic!] human participant and a software construct."[164]

This definition is not very helpful as it has the same problem as the definition I gave above has. If we read a document, a PDF (Portable Document Format) for example, we can scroll down or go to the next page which, again, implies interactivity, but there is no real interaction between the human participant and the document in the sense that the document would change. The interactivity in this example only affects the viewing process.

If we take a look at machinima and computer games we can see why and how important interactivity is. To be able to control a character in an environment is crucial for machinima. The current real-time 3D games are calculating the images you get to see on the screen on the basis of different components. In comparison to the choose-your-own-adventure-book the things you get to see are based on these predefined components but are generated on the fly in real-time. The possibilities interactivity offers are therefore enormous. This enabled the production of films in this environment, but the films themselves are mostly linear. [165]

Therefore, computerization brought new ways of interactivity. This lead to new forms of media and changed some media forms which were linearised throughout the history of mass media.[166] Instead of replacing old forms, these new forms have broadened the spectrum.

If we speak of interactivity we have to specify what we are talking about. Therefore I stick to the broad definition I gave and will specify what I mean by using this term where I think it is necessary.[167]

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[164] Roach 2005:280

[165] Linear at this point means that the content is not interactive or not generated but predefined.

[166] See also Walter Benjamin and his essay "Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit" (The Work of Art in the Age of Mechanical Reproduction) in Benjamin 2002. Aarseth stated that we already in times of "post-Reproduction" (Aarseth 1997) because of the dynamics of the internet.

[167] It would also be possible to categorise different ways of interactivity. For example Marie-Laure Ryan does this in Narrative as Virtual Reality (Ryan 2001a:210-214) and Eric Zimmermann presents four different modes of interactivity: Cognitive interactivity, functional interactivity, explicit interactivity and meta interactivity. This is a structural way to use the term interactivity more specific. (Zimmerman 2005:458-459)

3.2 The Conflict

There have been, and probably will continue to be, a lot of discussions about games. Computer games got more and more important in our society in the last few decades and an academic field of research called ludology or game studies has started to emerge that investigates not only computer games, but games in general. The discussion becomes heated when some factions collide which want to define games as a part of their scientific fields. So now there are people who say that every game is a story or a drama or a film; others say a game is a game.

> "Today we have the possibility to build a new field. We have a billion dollar industry with almost no basic research, we have the most fascinating cultural material to appear in a very long time, and we have the chance of uniting aesthetic, cultural and technical design aspects in a single discipline. This will not be a painless process, and many mistakes will be made along the way. But if we are successful, we can actually contribute both constructively and critically, and make a difference outside the academy. "[168]

In this conflict, **Espen Aarseth** speaks of an ideology that might be called narrativism, which "is the notion that everything is a story, and that story-telling is our primary, perhaps only, mode of understanding, our cognitive perspective on the world. Life is a story, this discussion is a story, and the building that I work in is also a story, or better, an architectural narrative."[169][170]

Janet Murray is proposing this:

> "Games are always stories, even abstract games such as checkers or Tetris, which are about winning and losing, casting the player as the opponent-battling or environment-battling hero."[171]
>
> "Most stories and most games, electronic or otherwise, include some contest elements and some puzzle

[168] Aarseth 2001

[169] Aarseth 2004:49

[170] On stories from the view of cognitive psychology see Grodal (Grodal 2003). The approach from Grodal to stories and games is independent from most of the theories I present here. I therefore recommend it. He states that our brain works with narrative mechanisms. Even though this could be possible I do not believe that we should therefore see everything as stories. The fact that stories are similar to the way we think is not surprisingly since storytelling is a core human activity.

[171] Murray 2004:2

> elements. So perhaps the question should be, is there a story-game? Which comes first, the story or the game? For me, it is always the story that comes first, because storytelling is a core human activity, one we take into every medium of expression, from the oral-formulaic to the digital multimedia."[172]

In the next chapter I want to make a distinction between game and story and I want to start by stating that gaming is also a "core human activity". Before I come to this I want to briefly hint on the problems with the terms story and game. Let me ask two questions: Is a detective story also a game because you actively want to find out who the murderer is? Is it not possible to describe every game as a story because during the game there will be a sequence of events?

3.3 Natural Game and Story Roots

To find answers, I will start by going back in time to see where the roots of the concepts of story and game could be. Actually, it is very probable that games are a lot older than stories. This is the first hint that a game cannot be a story:

> „Well, computer games are games, and games are not new but very old, probably older than stories. It could even be argued that games are older than human culture, since even animals play games. You don't see cats or dogs tell each other stories, but they will play."[173]

I will base this on the explanation of the "Natural Funativity Theory" of **Noah Falstein**[174] and later on we will hopefully see the truth behind the following sentence:

> "Anyone who tries to make a distinction between education and entertainment doesn't know the first thing about either."[175]

[172] Murray 2004:3
[173] Aarseth 2004:46
[174] Falstein 2005
[175] An often cited statement by Marshall McLuhan. (Cited from Falstein 2005:85)

Falstein thinks that we "have to consider the way humans lived tens of thousands of years ago and more to see the survival significance of many of our genetic preferences."[176]

He imagines three characters called Aagh, Bohg and Cragh. They were all on the hunt and came back with enough meat to feed the families. After the hunt, Aagh goes out to hunt again, Bohg lies down back and Cragh throws stones at wooden pieces. Aagh is training his abilities but risking his life unnecessarily in the wild. Bohg gets out of practice by doing nothing. Cragh is training his hunting abilities without risking his life. Because Crahgs strategy seems to be the best, it is more likely, that his genes will spread.

Falstein is referring to this as the logical basis for his theory. To this I want to add some additional thought. Cragh is learning by what we normally call playing but this is not the only way of learning. Let us image this: It happened one year that there was a big drought and the old Dregh began to tell the story of another big drought that happened to their ancestors. They only survived by moving south for some years. The tribe learned from Dreghs story and Cragh learned from playing.

The "Natural Funativity Theory" is based on the fact that fun evolved because it made sense to learn by playing. Similar to this, it is possible to say that stories evolved because it made sense to learn by hearing what happened to others. To give a brief example why stories are good for learning, we can take a look at the structure of a drama as very problem-oriented: A situation is described (first act), a conflict appears (second act) and the conflict will be solved (third act). It therefore refers to typical problem solving mechanisms which we use every day.

What is interesting about this little imaginative story about the roots of stories and games is that it is possible to mark down two important things. The first is that these two ways of learning are clearly two different concepts which are not interchangeable. The second is that they work because they concentrate on certain aspects and leave other parts out. Cragh's learning concept works because he is concentrating on the difficult part of throwing something at an animal for which he has only few chances in a hunt. He leaves out things like lying in a hideout and waiting hours before an animal comes along. In a similar way, Dregh builds his story onto what is necessary in the current situation. He does not tell the whole tribe history. A statement by **Alfred Hitchcock** points this out:

> "Movies are like life with the boring parts taken out."[177]

Even if in contemporary culture the way we use our leisure time to experience entertainment often has nothing to do with survival strategies any more, we can understand what **Marshall McLuhan** meant when he said:

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[176] Falstein 2005:83

[177] A saying by Alfred Hitchcock. (Cited from Roach 2005:281)

> "Anyone who thinks there is a difference between education and entertainment doesn't know the first thing about either."[178]

There is one question now: What does this have to do with games? Cragh is playing and this is an important element of games.

3.4 Why is a Game not a Story?

There are different approaches by different people to games and especially to computer games. Every approach sheds new light to the field of games but not all of them can be seen as fitting perfectly to what computer games really are. In my opinion, computer games are primarily games and not stories or something else.

To present a little overview, **Brenda Laurel**[179] is taking on computer games from the perspective of drama. **Janet Murray**[180] is seeing them as storytelling and **Lev Manovich**[181] approaches them from a film studies perspective.[182] The reasons for these multiple perspectives on games is understandable as computer games often contain story elements, produce visuals and are dramatic. Of course this is an oversimplified explanation as the approaches are academically advanced.

On the other hand, there are people who think that games are games and deserve a field of study in their own right, sometimes called game studies or sometimes called ludology as introduced by **Gonzalo Frasca**.[183] There are several people on this side of the fence, including **Espen Aarseth**[184], **Markku Eskelinen**[185], **Jesper Juul**[186], **Gonzalo Frasca**[187] and **Chris Crawford**[188].

First, I want to introduce the point of view by **Janet Murray**:

> „Gaming and storytelling have always overlapped. They are both being expanded at this moment as authors take advantage of these new affordances, and

[178] An often cited statement by Marshall McLuhan. (Cited from Falstein 2005:85)
[179] Laurel 1991
[180] Murray 1997
[181] Manovich 2001
[182] Overview from Frasca 2004:85.
[183] Frasca 1999
[184] Aarseth 1997
[185] As listed by him in Eskelinen 2004:36-37.
[186] Juul 1999
[187] Frasca 2001b
[188] Crawford 1984

> they have increased opportunities to develop in their areas of overlap. But there is no reason to limit the resulting form to the dichotomies between story and game, which are more rigidly established in legacy media. We can think instead of matters of degree. A story has greater emphasis on a plot; a game has greater emphasis on the actions of the player."[189]

I agree that in contemporary media products, for example computer games, both concepts of games and stories are used together. Therefore I will discuss computer games such as role-play-games below and will focus on cut-scenes in the next chapter. Nevertheless I do not believe that the concepts behind stories and games are overlapping. Nevertheless, I also do not believe in a dichotomy between story and game.

One of the main reasons why "narrativism" evolved is that both games and stories are somehow based on events but this is not enough to make a game a story. We have to look closer and therefore take a look at what **Eskelinen** says about events in different concepts.

> „A sequence of events enacted constitutes a drama, a sequence of events taking place a performance, a sequence of events recounted a narrative, and perhaps a sequence of events produced by manipulating equipment and following formal rules constitutes a game."[190]

Even if this is not the only way to see the differences, as performances and dramas could also be seen as narratives, there is one important aspect: Every concept is based on events but **Eskelinen** distinguishes these through the use of different verbs.

With this in mind, I want to introduce a new term here: simulation. What Cragh was doing in the example above was simulating. He simulated the most difficult part of the hunt. A simulation is „a representation of the function, operation or features of one process or system through the use of another."[191]

A simulation is often seen as an imitation of something real. Cragh is abstracting the deer to wooden pieces and therefore builds himself a representation. He is now throwing stones at them. The important thing here is that this playing is a process. There is no simulation if Cragh is not doing it. Stories are different, as stories can exist without anyone doing anything. We can there-

[189] Murray 2004:9
[190] Eskelinen 2004:37
[191] Lindley 2005:172

fore conclude that simulations are about processes and stories are about data.[192]

But what does simulation have to do with a game? A game can be seen as a kind of simulation. To give a simple example: To turn Cragh's simulation into a game, you simply have to add another player and a scoreboard.

> "Games, however, are often simulations; they are not static labyrinths like hypertexts or literary fictions. The simulation aspect is crucial: it is radically different alternative to narratives as a cognitive and communicative structure. Simulations are bottom up; they are complex systems based on logical rules."[193]

If we come back to the quote from **Eskelinen** above, we can see the little flaw in his statement.[194] Games do not have so much to do with a produced sequence of events but with the process of producing a sequence of events. From this point of view a performance or drama could also be a game, because they can also follow formal rules and manipulate equipment. We see that time matters in this case:

> „In temporal terms, narrative is about what already happened while simulation is about what could happen."[195]

It seems to me that it is easy to come to the wrong conclusion about stories and games because the retelling of what happens while playing a game can already be a story. Therefore, to write or read about games can easily be misleading as it is always something that already happened. We can conclude: A simulation is not a story but every simulation can lead to a story.

Gerald Prince defines narrative as "the recounting (as product and process, object and act, structure and structuration) of one or more real or fictitious events communicated by one, two or several (more or less overt) narrators to one, two or several (more or less overt) narratees."[196]

With this definition we encounter a problem. I said story is data but here we also read the word process. One way to tackle this is to see the story as the events and the narration as the process of communicating the story. To read or hear a story is always a process. To put it simple, the receiver has to think to make a meaning out of what he receives. So undoubtly storytelling is a

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[192] Crawford (Crawford 2005:201) is also coming to this conclusion and Juul (Juul 1999:1) is also differentiating games and stories by being "now" and "past".

[193] Aarseth 2001

[194] To say that is a little bit harsh as Eskelinen is explaining the connection between events and different media and does certainly not try to give a perfect definition in these few words.

[195] Frasca 2004:86

[196] Prince 1987:58

process and reading is a process but the story is data. The story is being recounted. In a simulation nothing is recounted, it happens.[197]

If we would see the events during a simulation as a narrative we could also say that events in life are a narrative. A presumption that even **Marie-Laure Ryan** does not agree with although she includes computer games in her concept of narrative.[198]

3.5 Translation and Development

A few decades ago there was the thought that every story can be translated into another medium.

> "[Story is] independent of the techniques that bear it along. It may be transposed from one to another medium without losing its essential properties: the subject of a story may serve as argument for a ballet, that of a novel can be transposed to stage or screen, one can recount in words a film to someone who has not seen it. These are words we read, images we see, gestures we decipher, but through them, it is a story that we follow; and it can be the same story."[199]

This strong position has been softened throughout the years. While **Chatman** speaks of the "essential properties" **Brooks** only recognised the original story.

> "Narrative may be a special ability or competence that [...] when mastered, allows us to summarise and retransmit narratives in other words and other languages, to transfer them into other media, while remaining recognisably faithful to the original narrative structure and message."[200]

[197] A consideration: Games and Stories can be seen as sequences. Games = Data (rules) > Process (Playing) > Events (e.g. they could be recounted) / Story = Events (real or imagined) > Data (recounted events) > Process (interpretation by reader/viewer). To see stories and games as sequences like these the connection is very visible: The sequence of a game ends with events and the sequence of a story begins with events.

[198] Ryan 2005:6-7

[199] Bermond 1964:4 (Cited from Chatman 1978:20)

[200] Brooks 1984:3-4

Ryan argues that this position has been abandoned because not every medium has the same possibilities.[201]

> "[We] can never get everything between media, but at least something seems to get transported from medium to medium. A recounting of Pride and Prejudice the movie will be recognisable to somebody who has read the book."[202]

So there seems to be the position that stories can be translated between different media, but not without restrictions. This leads to another fact which helps us to understand why a game is not a story. If you flip the sentence "Every simulation can lead to a story." its meaning wouldn't be true. A story can never be translated back into a simulation. This is a mistake which often leads to problems within discussions or development of hypertext novels, game development or interactive storytelling.

The reason why the translation is causing problems is that some people make a mistake by thinking that the computer offers new ways to tell stories through computer games. As pointed out earlier, the hype that arose around the term interactivity has nothing to do with it being new but with it being newly available with computerisation after mass production made it impossible for many to interact with the creators and their content.[203] This new availability comes with a key feature: automation through computerization.

Will Wright, one of the most important game designers today, says this about stories and games:

> "[…] I've always had a hard time accepting the idea that games should aspire to tell better stories. There seems to be this expectation that new media forms will evolve smoothly form older forms […] and then go on to find their niche. The jump from linear media to nonlinear is in many ways a much more fundamental shift, though."[204]

There is some truth in what **Will Wright** says but I think there is not really a jump from linear media to non-linear media. The jump seems to be there but it is a technical one and it does not go from non-linear to linear media. It seems to be more like an aberration in media history.

There have been games and now there are computer games. It would most surely be possible to break it up into developments of sport games, social games, board games and so on, but ultimately it will stay the same: There has

[201] Ryan 2005

[202] Juul 2001

[203] At least this was not intended even though their are forms of expressions that use the content in an unintended form like sampling in the Hip-Hop culture.

[204] Wright 2004:12

been a technology jump and with it computer games arose. This was indeed a fundamental shift regarding games.

There have, of course, been shifts regarding stories, but the shift was not so fundamental. For example hypertext and hypermedia changed our world but had almost no effect on how stories are being told.

> "Much hype has been produced about the ability of new technology to instigate new ways of thought and communication. Take hypertext, which was supposed to give us writing skills that adhered much closer to the way our brains worked, a more "natural" way of textual communication. So far, however, the World Wide Web, the most successful hypertext system by far, has only produced a better distribution mechanism, and very few texts actually use the nonlinear possibilities of the technology."[205]

There is no jump between stories and games, because it is not possible to translate them, but why can they not be translated? A game is basically a set of rules in which's space play can occur. Games are therefore not about certain predefined events. The author creates rules. In a story it is all about the events that took place. If you turn a game into a story, you can only retell the sequence that occurred during one game session and when you try to make a game out of a story you can only use the story as a context. The actual game still has to be created. Just because stories can occur in games does not mean that you have a game when you have a story. The essential part is the rules and not a narrative framework.

Even if we look at the translation from the perspective of a participant, it would not work:

> "Even if we were to play only a single game session of a hypothetical game and end up performing exactly the same sequence of events that constitute Hamlet, we would not have had the same experience as had we watched Hamlet performed. We would also not consider the game to be the same object as the play since we would think of the game as an explorable dynamic system that allowed for a multitude of sequences."[206]

The aberration of this mythical jump or shift from linear to non-linear is possibly caused by the computerisation. It was a technology jump that enabled hypertext, interactive fiction, interactive storytelling or interactive films,

[205] Aarseth 2001
[206] Juul 2001

but there are predecessors to them: **I Ching**[207], **Cent Mille Milliards de Poèmes**[208] or even Choose-your-own-adventure-books and role-play-gaming.

There are also a lot of computer games which refer to a film but as already stated there is no real translation between stories and games.

> "In the computer game, the titles, intro sequences and cut scenes work in the same way [as desktop metaphors]: Their purpose is to explain to the player, why this platform game is at all related to the movie The Lion King, why this 3D flying game is related to Top Gun. Because it is not clear from the game itself."[209]

This argument gives the impression that these narrative elements are being forced onto the game but I do not think that narrative elements in games are necessarily bad.

I want to take **Star Wars** computer games as an example. Computer games related to **Star Wars** use the universe of this fictional world. One could say that the only interest in doing this is a commercial one. While this is probably partly true it would be narrow-minded to see this as the only connection. People speak of a **Star Wars** universe. We have to see that one work does not stand alone out there but that the relationship between different works is the creation of something new. **Star Wars** fans most certainly feel more pleasure in steering a pod racer than in steering an "unlabeled" racing vehicle. The new universe the fan creates in his mind becomes more dense and complex with every new work. In times when media industries are concentrating more and more on these worlds, this universe-creating process has to be examined further in the future. Apart from **Star Wars,** there are the worlds of **Harry Potter**, **Lord of the Rings**, **Start Trek**, **Stargate** and many more examples of "smaller universes" out there.

As I mentioned earlier the commercial interest of the game industry also plays a role in including narrative elements in computer games. One example is that in advertising commercials on TV, in the cinema or on the internet, it is of benefit if a story can be told, as these media are good for storytelling. The actual feel of playing cannot be communicated and therefore there is a shift to the narrative elements of the game.

[207] A classical Chinese Text with a history that dates back to 2800 B.C.E.
[208] Queneau 1961
[209] Juul 1999:39

3.6 Differences between Games and Stories

Being used as a form of entertainment or education, games and stories share some properties. Nevertheless, they cannot be seen as basically one concept only because of some similarities. One of the obvious and often misinterpreted elements games and stories have in common are events. To put it simple: Games are producing them, stories are recounting them.

The connection with events is different for games and stories and this is the origin of many differences between games and stories. I want to point out a few of them in the following chapters.

3.6.1 Repeatability

Some games can be repeated endlessly, such as football, poker or **Tetris**. It is of course also possible to reread a book, but I have never heard of someone rereading **Faust** every Friday evening. The reasons for rereading something are to investigate the many different possibilities of interpreting the story, or to feel the pleasure again, which seems possible only a limited number of times and is often based on forgetting some parts before the rereading. In games the repeatability is different because a game defines a space through rules which can be filled out differently every time it is played. There is an obvious difference in how players handle events differently from readers for instance. To give a brief example: If someone tries to get through a level in **Super Mario Brothers** over and over again, he can do the same things producing the same events by supposedly making the same mistakes a lot of times. The player will probably get frustrated after a while, but this example shows, that the actual created sequence of events does not have the same value as it does in stories. The repeatability is not only possible because the events during play differ, but also because the events could differ. It is this possibility that motivates people to try again.

In addition to this, the repeatability makes the time of playing a game way more unpredictable than reading a book or watching a film. This, combined with the try-again-motivation, often leads players to play longer than they intended.[210]

[210] Newman 2004:58-59

3.6.2 Participation

> "While readers and viewers are clearly more active than some theories have previously assumed, they are active in a different way."[211]

The way a reader participates differently to a player is also important. Referring to **Aarseth**, **Eskelinen** mentioned that media, such as literature, theatre and film are interpretative but games are configurative.[212]

To put this simply: While playing you primarily have to think before doing something and in literature you have to read before thinking. Again, this can be seen as one of many conclusions leading from the fact that stories are about data and games are about process.

Juul has a very practicable example for the different participations in games and stories. [213] If we say "Brian is a pig." to someone this would usually be considered an insult. If we say "Brian is a pig." in a game it could simply mean that in this situation it is imagined that Brian is a pig. If Brian watches the film **Babe** instead and feels immersed, nobody would say "Brian is a pig."

I mentioned earlier that to see games as stories lead to a few problems. One of them is the different participation of readers and players. **Ryan** asked who would actually commit suicide in a game version of **Anna Karenina**.[214] **Bernstein** and **Greco** asked themselves similar things but they specify the problem by not just pointing to an action that a player would not do but instead referring to a deeper problem:

> „Even if we could experience Hamlet on the Holodeck, it wouldn't work. Tragedy requires that the characters be blind (as we ourselves, at times, are blind). If you let a sane and sensible reader-protagonist into the room, everything is bound to collapse. Take Hamlet: it's absolutely obvious that he should go back to school, get roaring drunk, get laid, and await his opportunity. He knows this. Horatio knows this. Ophelia knows this. Even Claudius and Gertrude know – why else send for his college pals? Nobody can bring themselves to say the words – that's the tragedy. But, if you're the sane and sensible character with Hamlet on the Holodeck, what's to stop you? Only brute force and error messages […]"[215]

[211] Juul 2001
[212] Eskelinen 2004:38
[213] Juul 2004:131
[214] Ryan 2001b
[215] Bernstein 2004:178

After all, what we think, while reading a story, has no influence on the story. Different readings only change how we perceive the story. This thinking and rethinking is of course an active process but in the end we do not participate in or with the story.

> „By telling us a story, it [the novel] asks us to set aside our right to make choices – our agency."[216]

The fact that we are not participating within the story is not a disadvantage. It is even necessary to be able to use main characters to convey meaning.

Aarseth mentioned:

> "Novels are very good at relating the inner lives of characters (films perhaps less so); games are awful at that, or wisely, they don't even try. We might say that, unlike literature, games are not about the Other, they are about the Self. Games focus on self-mastery and exploration of the external world, not exploration of interpersonal relationships (except for multiplayer games)."[217]

The activity of playing is quite contrary to the one of reading as in games „the real fun is in participation, not in watching others play."[218]

3.6.3 Temporal Relations

As already stated, stories are about past events and games are about the current events.[219] Therefore, their temporal relations have to differ. In regards to stories, it is the relationship between story time and discourse time that is of importance. Regarding games **Eskelinen** calls it the relationship between user time and event time.[220] **Juul** also uses these terms and together he calls them game time.[221]

The most important thing about these different temporal relations is that games are perceived as something that happens now instead of being something out of the past.[222]

[216] Perlin 2004:13-14
[217] Aarseth 2004:50
[218] Aarseth 1997:141
[219] Juul 1999
[220] Eskelinen 2004:37
[221] Juul 2004:131
[222] Read more about that topic in Newman 2004:103.

3.6.4 Point of view

The use of point of view is very important to a narrative. There are three types: first person, second person and third person. Common examples for these three are autobiographies for first person, adventure books and letters for second person and novels and plays for third person.

It is possible to find these points of views in computer games as well. As in literature, first and third person are most widely used. But very often, the second person is also used.

The use of points of view in computer games is very different from their use in narratives. In many games it is possible to switch between first and third person points of view during play. The effect is not comparable to a switch of point of views in a narrative. In most cases, it is a simple gameplay decision by the player. The question a player asks could be: "Do I have better control over the car from this or that perspective?" Simultaneously, the second person is frequently used together with first or third person. An example is a simple dialog box asking: "Do you want to play again?" Many times, there also are three perspectives on one screen. An example: In a first-person shooter, the main perspective is the first person's, a third person, or "radar", displays the area of the level and instructions are written from a second person perspective.

Narratives and games simply handle point of views very differently. One explanation is that the player is always himself.

> "When you play a game 10,000 times, the graphics become invisible. It's all impulses. It's not the part of your brain that processes plot, character, story. If you watch a movie, you become the hero - Gilgamesh, Indiana Jones, James Bond, whomever. The kid says, I want to be that. In a game, Mario isn't a hero. I don't want to be him; he's me. Mario is a cursor."[223]

3.6.5 Authorship

An author of a story creates a sequence of events. An author of a game defines the rules of the game. Outside of this narrow scope, in the production of today's computer games, a lot of people are involved. They create graphics, sounds, music and so forth.

This statement seems to be simple but some people who follow the concept of games being stories often describe the player as some kind of co-author. If you see the produced sequence of events retrospectively this is of course at least co-created if not created by the player. But I already mentioned

[223] Game designer Rob Fulop in an interview by Rosenberg 1995.

that many mistakes arise from the fault of not seeing the game as a process but as data. If you see the game as a process, the conditions of this process are created by the game author. The authorship of narratives and games are simply different.

> "As therefore, in the other imitative arts, the imitation is one when the object imitated is one, so the plot, being an imitation of an action, must imitate one action and that a whole, the structural union of the parts being such that, if any one of them is displaced or removed, the whole will be disjointed and disturbed."[224]

Usually, every part of a story needs to be read in order to understand it. For example, it is not common to watch only one half of a film. In contrast there are many players who never finish the game in the sense that they reach some sort of final level. It is simply not that important or sometimes not even possible. In traditional games like tag, there is no set end. Or in sport, you can always play another round. Many computer games have changed this through the concept of levels, but ultimately it is not very important for the experience of playing a game that the player finishes it some day. Instead in computer games, the rules have to be there all the time during gameplay.[225] The main difference between games and computer games here is that it is possible to hide the rules or make them transparent for the player. In pure gaming there is no end and no last page. There is only the action of the player or players. In a narrative, every part of the story is equally important to understand it.[226]

Aarseth states that the ability of transforming the content into something different or new does not depend on the medium or technology but instead on the motivation of the reader.[227] In narratives there are many fan fiction works that transform the original work into something new, and in games there are game mods that transform the original game through changing rules, graphics and so on.

3.7 Games and Stories Combined

Although games and stories are different concepts, there are relationships between them. One is that they share some aspects because they derived from a common activity: learning. Despite this there is another connection. I

[224] Aristole 350 B.C.E
[225] At least if there are not several gameplays included in one game.
[226] See also Eskelinen 2001.
[227] Aarseth 1997:164

pointed out that stories cannot be translated into games and games not into stories, but the events created through playing a game can be used for a story.[228] There is also a connection in the other way around: It is possible for a story to be an element of a game.

To come back to the learning-aspect, I will give a brief example: A teacher wants the pupils to read a story. To control the exercise he assigns them to write a summary. In the middle of the school lesson, he fears that the pupils will not read fast enough out of laziness, so he introduces a game: Whoever submits the first summary wins.

The teacher created a game. There is, of course, a story involved as to read it is one of the two main activities. The other one is to write the summary. This is one possible connection between stories and games.

One of the pupils comes home after school and tells his mother that he played a game in the school. He had to read a story really fast, write a summary about it and hand it to the teacher before anyone else did and he won. The mother is proud and her son just told a story. This is the other possible connection between stories and games.

Of course this is applicable to other media forms, too. For example, the story does not have to be read.

> „If one were to watch the screen while someone else is playing, the artefact would effectively be a movie. However, a game is clearly not intended to be experienced (primarily) in this way […]"[229]

This quote is very interesting because that is what machinima makers do. They use a computer game to tell a story but nobody would ever think of calling a machinima a game.

Jenkins tries do build a bridge between the narrative and game-hardliners by "examining games less as stories than as spaces ripe with narrative possibility."[230] Following this statement, he tries to list some points where everybody might agree. Later on, he asks us to think of game designers not as storytellers but as narrative architects.[231] I disagree, as I think this leads to wrong design principles. There is no need to try to embed narrative in games. Games can work excellently without them. Despite this, there are some games which benefits from narrative elements.

Even though **Juul** sees games as non-narrative, he states that games and narratives can have similar traits at some points.[232] There can be narrative tutorials or introductions to tell the player what to do. There can be cut-scenes as rewards for achievements and there can be ways to enhance storytelling of a sequence of events produced by a game-session.

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[228] This is the reason why so many scholars speak about storytelling and not stories.
[229] Lindley 2005:169
[230] Jenkins 2004:119-120
[231] Jenkins 2004:129
[232] Juul 2001

I made a distinction of games and stories but if we see the existing fields and works this distinction often becomes unclear. **McKenzie** noticed in a response to an article by Jenkins[233]:

> "[…] no genre, work, field is unique and self-contained: each is a specific yet fuzzy combination of other things that are themselves diverse and non-unique."[234]

I agree that things can get fuzzier and they start to look the same if you look hard and close enough but in the end, it is better for an academic approach, to try to describe them as clearly as possible. To evaluate the statement that stories and games are different concepts but can be connected in some ways, I will present some thoughts on a few much-discussed fields and works.

3.7.1 Computer Games

There are a lot of computer games which are discussed widely in academic research. I will present a few of them here to make my points clear with concrete examples and genres.

If we take a look at computer games, we have to see that there are millions of players out there with very different ideas on what a computer game should be. Some of them prefer computer games with narrative elements, may it be to enjoy cut-scenes as a benefit or to feel more immersed in the game world.[235]

Whether computer games include narrative elements also depends on the genre. Even if **Newman**[236] calls this categorisation nebulous and problematic for scholar studies, it is obvious, that some genres of computer games have stronger ties with narrative elements than others. There are genres such as role-playing and adventures and there are other genres, including simulation and strategy.

The contemporary computer game can be seen as an entertainment product that includes a lot of time story and game. Computer games are using stories as frameworks or they have cut-scenes, in-game tutorials or background stories. For this category of games I will take a look at **Half-Life**. While these narrative elements are clearly separated from the actual gameplay, there are computer games where the distinction is not as obvious. Role-playing-games

[233] Jenkins 2004
[234] McKenzie 2004:118
[235] Also stated by Lindley 2005:163.
[236] Newman 2004:12

(RPGs) are a good example for this, one of the reasons being the extensive use of dialogs.[237]

The Sims is discussed a lot, because with the new gameplay in a social environment it created a new genre in computer games. With its focus on social relationships it is determined to evoke comparisons to stories. **Zimmerman** therefore calls **The Sims** "a kind of story-machine."[238]

3.7.1.1 Half-Life

Many computer games include cut-scenes to tell a story between different levels. This has been criticised a lot by theorists but, as I stated earlier, it is too easy to simply accuse them of causing an unpleasant interruption during gameplay. Some player types prefer cut-scenes and some do not. **Valve** tried to integrate the narrative sequences more into the gameplay. The first-person perspective is not changed during these sequences and the player can move around in a restricted area, normally the room in which the scene takes place. But even though the integration of the story is enhanced and the player's experience of the game is more fluid in this way, the player switches the modes of participation. The player does not play anymore in these sequences. He can choose from which angle he wants to view the scene. The edges between narrative elements and gameplay are more blurred than in common computer games but the elements are still distinguishable. It is also important to note that the product **Half-Life** is still a computer game. You cannot see it as a story as the narrative elements are just a vehicle to set goals for the player and to describe the universe.

Juul stated that by playing **Half-Life** the ideal path is not being followed because of countless saves and reloads.[239] Nevertheless, since the narrative elements are strictly linear afterwards, a retelling is possible by leaving out most of the actual gameplay elements such as countless deaths.

I will come back to **Half-Life** in chapter 4 where I will investigate "rollercoaster rides" such as **Half-Life** in depth.

3.7.1.2 Role-Playing-Games

> „One cannot simply remove the story from Dungeons and Dragons the way that the narrative cut-scenes in Ms. Pac-Man can be lifted away. Nor can the aspects of contest be removed without changing the experi-

[237] In addition some games and especially RPGs are difficult to grasp because they primarily seem to provide a world in which different games are possible. The rules of the world and the rules of the game blend together.

[238] Zimmerman 2005:468

[239] Juul 2001

> ence into something other than Dungeons and Dragons."[240]

Montfort refers to pen and paper role-playing-games with the mention of **Dungeons and Dragons** but we can imagine the same argument with a reference to a role-playing-game on a computer. However, I do no agree with **Montfort**. I believe that RPGs are games and not stories. It is not possible to remove the story of **Dungeons and Dragons** because there is none. It is a set of rules and a description of a world. The description, of course, can be assembled by stories but I think that is not what **Montfort** meant when he wrote about removing the story.

Again, the problem is that someone watching a game being played, might receive it as a story, and a sequence of events that is produced when one or more players are role-playing is much more "storylike" than a round of **Tetris**, but to actually play the game is a process. Another aspect why some people think of RPGs as stories is that many events are already fixed. If you finish the game you will kill the dragon and be the hero. This is prewritten, but only because there are a lot of fixed events in a RPG, it does not transform the game into a story. Instead, it reveals that there is a huge freedom of what a player can do which will finally melt down to a fixed number of key events to finish the game.

Although RPGs have to be considered to be games, they usually include a lot more narrative elements than many other games. This is mainly due to the social aspect of the game and the simulation of a relatively concrete world. This becomes clear by comparing the world of **Tetris** with the one of **Baldurs Gate**. The latter usually includes characters who are telling stories inside the game and it is possible to read stories out of books or other documents.

3.7.1.3 The Sims

> „Nevertheless, games like The Sims are sometimes (not often) used as storytelling machines, when particularly memorable moments in the game are retold by the player/god. But this is not translation from game to story, this is simply good, old after-the-fact narration, like the football column in the Monday sports section, the lab experiment report, or the slide show of one's Carribean vacation. Something interesting happened, and we want to tell others about it."[241]

This quotation mentions another instance of the computer game not being a story in itself but a good platform for telling a story about the events

[240] Montfort 2004:313
[241] Aarseth 2004:50

that happened during play. But is **The Sims** even a computer game? As suggested in the title, it is a simulation. It is a simulation in which a "player" has control, but even if one is playing with the different elements of **The Sims,** it is possible to say that the player is not playing a game because of the lack of some sort of goal or competition. **Murray** also concludes that "The Sims is neither game nor Story."[242] If we call **The Sims** a story-machine it is not more and not less a story-machine like normal day life.

3.7.2 Second Life

Second Life is a virtual world and therefore also a simulation. Like **The Sims,** it is possible to tell stories about what happened in the simulation. Compared to **The Sims** where the characters are simulated, in **Second Life** only the environment is simulated and the characters are controlled by humans. Just as **The Sims, Second Life** is a simulation and not a game or a story.

Second Life has strong connections from the simulation to the "real world". These not only consist of the direct user interaction but there are also other connections like monetary ones. Therefore, the boundaries between the simulation as an imitation of something real and reality itself become increasingly blurred.

3.7.3 Interactive Drama

What is an interactive drama? I will start with the description by **Mateas**[243] who focuses on the notion of **Laurel**[244] and the **Oz Project** at **Carnegie Mellon University**[245246]:

> "In this conception of interactive drama, the player assumes the role of a first person character in a dramatic story. The player does not sit above the story, watching it as in a simulation, but is immersed in the story."[247]

Now we have a clue as to what interactive drama is. There are a handful of terms for what **Mateas** described as interactive drama which mostly share the same concept. **Murray** postulates that we stop putting new artefacts

[242] Murray 2004:5
[243] Mateas 2004
[244] Laurel 1986
[245] Bates 1992
[246] Weyhrauch 1997
[247] Mateas 2004:20

like interactive drama into old media categories. She calls this concept cyber-drama.[248] **Crawford** uses the term interactive storytelling.[249]

This concept is definitely very interesting and a very complex field for academics. A general problem here is the use of AI to fit the needs. The research in this field is still far from a point were computers are able to simulate characters in a realistic way.

One of the most promising and interesting developments in recent years has been **Façade**. This interactive drama has a lot of limitations and is still far from what the researchers want to accomplish, but in this early phase, the creators **Andrew Stern** and **Michael Mateas** already managed to create a great work.[250]

Nevertheless, in line with my theoretical argument, I will have to criticise the use of the term story and simulation. **Chris Crawford** therefore uses the term storytelling to avoid the problem of these terms, as he sees story as data. Nevertheless storytelling is also not right, because storytelling refers to the process of relating a story. In storytelling, there are, of course, process and action involved but the only difference is that of a new communicator between the story and the reader. It would be possible to argue that a computer is also a kind of storyteller because it presents the data in a readable format.

Let us take a look at **Mateas'** description again. There is a player in the role of a first person character. We can assume that he can interact. To interact, a space has to be defined. This space is defined by rules. To this point we can therefore say that this fits the definition of simulation given earlier. **Mateas** is right when he says that the player is not above the story and not watching it as in a simulation. Instead, the player is interacting in or with a simulation and therefore it is not a story. If it was a story, the player would not be able to interact with it. I think it would be more appropriate to speak of interactive drama as a simulation which tries to follow the rules of a dramatic arc. What distinguishes interactive drama from other forms of simulation, such as computer games, is that they focus on a dramatic arc and also on conflicts between characters. For this reason, AI is so important in interactive drama.[251]

In my opinion, the term interactive drama fits much better as the term interactive storytelling does. I do not think the word interactive alone in front of another word has a defined meaning but what it implies is usually obvious.

I will look closer at the **Mateas'** definition again. Elsewhere he stated that drama consists of character, story and presentation.[252] As I do not see interactive drama as story, I think that **Mateas** and other researchers want to include aspects in their simulations which can be found in stories. These aspects could be: a dramatic arc, social conflicts, deep characters and complex social interactions.

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[248] Murray 2004
[249] Crawford 2005
[250] Façade is available for free: Procedural Arts: InteractiveStory.net (Website)
[251] More about this topic in Mateas 2000:5.
[252] Mateas 1997

Some of the systems the researchers are developing use "drama managers". These systems try to arrange the events which happen during play in a way that they can be received as a dramatic arc afterwards. They dynamically adjust the way the system reacts to the input of the player. Therefore they try to get the story in a direction they want and are limiting indirectly the possibilities or the effects of the actions of the player. I am not sure if a dramatic arc is necessary in an interactive simulation but it is definitely interesting to see if they can use this technique in the future to create great works.

In the concrete example of **Façade** as an interactive drama, there is an additional feature of the gameplay that makes the distinction between story and game more difficult. A player can choose to just stand still and see what happens. He can choose to be passive. The actions which are unfolding are then received as a story which unfolds without influence of the player. But this is not quiet correct. **Façade** simulates a social situation and therefore even a very passive visitor influences the behaviour of the characters. Even if this was not the case, as soon as we choose to just visit the scene, just as we can be "spectators" in many first-person shooters, we do not play anymore and therefore we subvert the intention of the game. On the other hand, stories can also be subverted in many ways.

I think that in the future research into interactive drama could also be used for other games because the main issue seems to be the creation of a dramatic arc and deep and credible characters. The developed methods could also be used in RPGs and in other computer games.[253]

To conclude my thoughts about interactive drama, I want to say that this research field is interesting and other fields might benefit from its methods but the intentions of the researchers are unrealistic. They do not include the differences between interactive simulations and stories. The player has his own will and it is hardly achievable to force him into a believable "storylike" sequence of events. Why should he act as the system is trying to get him to act? Try to imagine **Shakespeare** writing **Hamlet** if **Hamlet** is doing what he wants and not what **Shakespeare** wants. If the system is leading the player in a pleasurable way why should it ever stop? But the dramatic arc consists of a certain scheme that insists to end at one point. I do not believe that these problems can be tackled and therefore follow **Aarseth**[254] and **Juul**[255] in their conviction that an interactive drama is not able to create an experience comparable to literature for a player in which he is reader and "hero" at the same time.

[253] On this topic see also Thue 2007.
[254] Aarseth 1997:139-140
[255] Juul 1999:76

3.7.4 Interactive Fiction

> „By definition, IF [Interactive Fiction] is neither a „story“ or a „game“, but, as all IF developers know, a „world“ combined with a parser and instructions for generating text based on events in the world.“[256]

Montfort refers to IF as a world. He is partially right with this statement, but the term interactive fiction may lead to wrong conclusions. I would describe IF despite the literal meaning of the term as a software construct mainly used to simulate environments. This definition looks at IF from a very different perspective not stating whether works of IF are stories or games. My theory is, that IF can be a simulation, a story or a game. Often, IF- works only offer navigable actions which can then be considered as a form of simulation but a lot of other works are text adventures which are computer games. I will not describe IF any further here but this field makes obvious that we cannot always define a whole field as being just one, a story or a game.

3.7.5 Hypermedia

I call this chapter hypermedia. This will include hypernovels and also interactive cinema as these forms share many traits. The naming conventions are not clearly established which seems to be due to a lack of understanding what these media forms are.

Hayles sees "electronic literature" as something that emerged out of computer games and literature.[257] **Aarseth** instead conceives hypernovels as literature and therefore calls them ergodic literature.[258]

The boundaries of these fields are vague like in interactive fiction. It seems that the field has orientated itself more on the techniques that arrived with computerisation instead and therefore includes different media forms.

Most hypermedia works offer interactivity to navigate. This is why **Aarseth** calls them ergodic. This term derives from the Greek words ergon and hodos, meaning work and path. If the interactivity is simply some kind of navigation I believe that **Aarseth** is right and that most works are only a form of literature. In the case of interactive cinema it would be cinema.

Nevertheless, the technical possibilities also offer the opportunity to build hypermedia which could be seen as a simulation or a game. Therefore, the term of ergodic literature, established by **Aarseth**, brings in more clarity as it describes a work clearly as literature. If the techniques are used to create something different they also have to be labelled differently.

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[256] Montfront 2004:316
[257] Hayles 2001
[258] Aarseth 2004:53

The critical and scholarly world has discussed hypermedia a lot. One reason is the idea that a hypersystem is more suitable for the way our brain works than linear text but despite the huge success of the internet, hyperworks such as hypernovels and interactive cinema where not successful in growing an audience. I will therefore not discuss hypermedia more in depth and will instead refer to the works by **Bolter**[259], **Landow**[260], **Aarseth**[261] and **Murray**[262] in this field.

3.7.6 Machinima

> "The difference between watching someone playing a video game, and playing a video game by yourself, is tremendous."[263]

Stated above is an essential fact. If one watches someone else playing or retells what he just did, he can make a story out of a game. This is one of the points where confusion between the concepts of games and stories may arise.

Machinima makes this very visible. Some people are playing and creating a film through play, but not all machinimas are created through playing. The freedom of many first-person shooters lead to a point where many people use the computer game as a simulation, as a virtual reality to shoot their footage in. The freedom to move around freely, frees the player from the constraints of following the goals of the game. Therefore, we could also see some computer games in a different light. They could be seen as simulations and within them, different games are possible. You can just run around in the environment or you can play a game, "death match" or "capture the flag" for instance.

One example of the mixture of these different "modes" in first-person shooters is the machinima show **This Spartan Life**. The show takes place in a normal multiplayer game. There is a host and one or more guests who talk and explore the environment. Simultaneously other players are following the normal gameplay in this environment which leads to situations where host and guests switch modes and start to fight other players or just plainly get shot during the show.

[259] Bolter 2001
[260] Landow 1994
[261] Aarseht 1997
[262] Murray 1997
[263] Chen 2006

3.8 Definitions

3.8.1 Story

What exactly is the difference between story and narrative? It is possible to regard them as one and the same. As mentioned above, it is also possible to see the story as the sequence of events and the narrative as expressing this sequence in a certain way.

> "An impetus behind the identification of the story as a separate level of meaning from the narratives that express it is the fact that the same story may be expressed in many different narratives, either within the same medium or across different media."[264]

As a story cannot be translated into a game and vice versa, in this case it is not important whether narrative and story are different things. Therefore I will use story and narrative interchangeably.[265]

I have already cited the definition of narrative by **Gerald Prince**. Narrative therefore is a recounting of a sequence of events. This definition is rather vague and it leads to a point where, for instance, descriptions would be seen as narrative although we would not normally recognise them as a story. **Eric Zimmerman**[266] draws a definition from **Miller**[267] where, in short, he suggests that a narrative has an initial state that changes and therefore gives an insight. Furthermore, a narrative is a personification of events through a medium and this representation is constituted by patterning and repetition.

With this definition, games and real life situations, amongst others, can be considered to be narratives. So even if this definition is more complex, it seems to include more things than would normally be conceived to be stories and **Zimmermann** admits that he uses this definition to circumvent the question whether games are narrative or not.

Ryan too integrates computer games in her view of narratives, but nevertheless her definition reveals some interesting thoughts:

> „I propose to define the cognitive template constitutive of narrative through the following features.

[264] Lindley 2005:164

[265] For an example of one way to see the relationship between story and narrative more complex see Lindly 2005:163.

[266] Zimmerman 2005:456

[267] Miller 1990

> 1. Narrative involves the construction of the mental image of a world populated with individuated agents (characters) and objects (spatial dimension).
>
> 2. This world must undergo not fully predictable changes of state that are caused by non-habitual physical events: either accidents (happenings) or deliberate actions by intelligent agents (temporal dimension).
>
> 3. In addition to being linked to physical states by causal relations, the physical events must be associated with mental states and events (goals, plans, emotions). This network of connections gives events coherence, motivation, closure, and intelligibility and turns them into plot (logical, mental and formal dimension)."[268]

Particularly the last point is very interesting as **Ryan** tries to define what, in my mind, is missing in the definition of **Prince**. For example she tries to differentiate between recounting of a sequence of events that is simply descriptive and one that is narrative. Where **Crawford** states that the requirements for a story are difficult to specify, **Ryan** tries to tackle this problem. She does not use recounting as she sees this as a term that only includes verbal media. I would suggest to see recounting more freely which would then also include visual representations.[269] She also suggests that the prefix "re" should be optional with the purpose to include computer games and live broadcasting. This is the point where I do not agree with her because of reasons I have already made clear in this chapter.

For this work, the definition by **Gerald Prince** is sufficient as I do not want to make statements about the nature of a story, but only to make the differences between story and game clear. It would also be possible to see stories and/or narratives as "the representation of an event or a series of events" as **Porter Abbott** does.[270]

3.8.2 Game

> "However, even if it sounds obvious, videogames are, before anything else, games."[271]

[268] Ryan 2005:4
[269] Therefore recounting would include diegesis and mimesis.
[270] Porter Abbott 2002:12
[271] Frasca 2004:85

As discussed in depth in this chapter, games are not stories, and games can be seen as a process and as a kind of simulation. But how can we define a game? This task is widely discussed and it is hard to grasp the concept behind games. To approach a definition of games, I will present definitions by academics below:

> „The computer game is the art of simulation. A subgenre of simulation, in other words. Strategy games are sometimes misleadingly called "simulation" games, but all computer games contain simulation."[272]

As I already suggested **Aarseth** is also thinking of games as a simulation. Therefore it imitates real or fictional processes.

> "A game is a goal-directed and competitive activity conducted within a framework of agreed rules."[273]

This definition has the same problem as the simple definition of stories as a recounting of a sequence of events. It simply includes too much of what is normally not seen as a game.

To give an example: In a society that is restricted by rules (some of them are laws), almost everybody tries to earn money, simply because they need it. This is often a competitive activity because almost everybody has this goal.

What is missing in this definition is, that games are not "real" in the same sense other activities are. That is the reason why they are simulations. **Juul** sums these aspects up:

> "* A game is a pastime with formal and predefined set of rules for the progression of a game session, with built-in and quantitative definitions of success and failure.
>
> * What goes on in a game is considered "unreal"; has another status than the rest of the world."[274]

This seems to be a satisfactory definition. There are others that are similar, for example:

> "A game is a type of play activity, conducted in the context of a pretended reality, in which the participant(s) try to achieve at least one arbitrary, nontrivial goal by acting in accordance with rules."[275]

[272] Aarseth 2004:52
[273] Lindley 2005:174
[274] Juul 2000
[275] Adams 2007:5

Here we have the term play in the definition, a term that is commonly strongly connected to game.[276] What does play mean and what does it have to do with game? The terms game and play are usually associated with fun and joy. However, play is also used in other situations and according to **Zimmermann** has more to do with space.

> „Play is the free space of movement within a more rigid structure. Play exists both because of and also despite the more rigid structures of a system."[277]

His definition of game is also very to close to the one by **Juul**:

> „A game is a voluntary interactive activity, in which one or more players follow rules that constrain their behavior, enacting an artificial conflict that ends in a quantifiable outcome."[278]

He states that his definition is very narrow but still one can think of activities which fit in this definition and are not games. Think of physicians simulating experiments with a computer. They "play" with different parameters of the simulation to get a quantifiable outcome. Assuming they are not forced to work and maybe in an extreme case do this for a charity purpose, this would be a game.

I have to admit that this is a strange example, but it shows that in a definition of play it is difficult to include everything that we perceive as a game and exclude anything else. To come back to the introduction of this chapter: To define games and stories perfectly seems to be not possible as we use these terms not in a strictly categorised way. Nevertheless the attempts to define them help us understand the concepts and see the differences between them.[279]

To come closer what these terms mean in the practice, we have to look closer into the relations and effects of play and game:

> „Rules might not seem like much fun. But once players set the system of a game into motion, play emerges. And play is the opposite of rules. Rules are fixed, rigid, closed, and unambiguous. Play, on the other hand, is uncertain, creative, improvisational, and open-ended. The strange coupling of rules and play is one of the fascinating paradoxes of games."[280]

One of the main differences between the rules of non-computer and computer games is that the rules in the computer game may be hidden. You

[276] In fact in German we just have the verb "spielen" and the noun "Spiel".
[277] Zimmerman 2005:460
[278] Zimmerman 2005:462
[279] Fore a comparison of several definitions see Salen 2004:71-83.
[280] Zimmerman 2005:464

cannot play chess unless you know the rules, but you can figure out how to play **Tetris** by pressing different keys.

There are others who have investigated games more thoroughly. One prominent researcher is **Huizinga** with his book **Homo Ludens** written in 1938.[281] Furthermore **Caillois** distinguishes different types of games in his book **Men, Play, and Games**: agon, alea, mimicry and ilinx.[282] He also differentiates games in paidea with no or simple rules and ludus as games with more complex rules. It is also possible to see the similarities between paidea and play and between ludus and game. **Frasca** states a relationship between goals and ludus and no goals and paidea. A lot of contemporary computer games contain both modes. **Frasca** mentions flight simulators in this context.[283]

3.9 Conclusion

As discussed above, I consider stories and games to be distinguishable concepts. Although I believe that the discussions and positions about this topic lead to a deeper understanding of games and of stories, I hope that the people involved in this discussion see it as an opportunity and do not insist on considering their positions as unchangeable doctrines.

I believe that regarding stories and games as different concepts benefits the design of today's entertainment products. Some of the faults in the design of these products can be related to unclear conceptions of stories and games.

To see games as a narrative medium often leads to wrong conclusions. Many consider games to be a low form of art because they do not have the quality of literature. This attitude is only possible through ignoring the fact that games and stories are simply different.

An attempt to create a game that has the same narrative quality as for example a work of Shakespeare would probably lead to a bad game. What about chess, **Pong** or **Tetris**? They are not without reason referenced a lot to and are without doubt fabulously designed games, and are perfect examples of how depth in games often comes through the brilliant use of simplistic rules and concepts.

> „The question whether computer games can be considered art or not can easily be answered by pointing towards Boris Groys. Everything can be art and it is much more interesting to discuss the unique character-

[281] Huizinga 1955
[282] Caillois 1961
[283] Newman 2004:18-20

> istics and the creative potential of computer games than to keep the galleries free from entertainment."[284]

For a long time, being considered a low form of art, games and computer games did not receive much attention as a field of research. **Smith** even calls computer games "The Forgotten Medium".[285] **Newman** tries to explain why academics ignored computer games.[286] In line with the previous argument, he states that one reason could be that games have been perceived as a low art form and the other reason that they are traditionally considered to be for children.

However, through the growing importance of computer games in modern societies, it seems that the academic interest in this field is increasing.

> "Globally, video game spending is expected to rise from $32 billion in 2006 to $49 billion in 2011."[287]

The game industry is now a huge field and is getting bigger and more important than the traditional media forms.

> "To some of us, computer games are already a phenomenon of greater cultural importance than, say movies, or perhaps even sports."[288]

Aarseth refers to the years of computer games as a forgotten field of studies when he dates the emergence of this new academic interest:

> "2001 can be seen as the Year One of Computer Game Studies as an emerging, viable, international, academic field."[289]

For the academic research it is important to see ludology or game studies as a separate field and be recognised by other fields of study. After this process of defining the new field and the separation from other fields such as literature and cinema, specific researches will be needed in the future, rather than the generalisation that is quite common at the moment. There are very different games that need to be studied. There are not only the computer and non-computer games but for example in the field of computer games there are very different works such as **Doom**, **Tamagochi**, **The Sims**, **World of Warcraft**, **Pong**, **Tetris** or **Dance Dance Revolution**. Further more there are

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[284] Sotckburger 2007:35

[285] Smith, Jonas Heide: Game Research - The art, business, and science of video games » The Forgotten Medium (Website)

[286] Newman 2004:5

[287] PricewaterhouseCoopers: Spending on Convergent Platforms Will Exceed 50% of Global Entertainment & Media Spending by 2011 (Website)

[288] Aarseth 2001

[289] Aarseth 2001

different approaches to games drawing on the methodologies of social sciences, humanities and informatics.

In addition to academics, people working in the game industry also think about games and stories. In a lecture, **Warren Spector** stated:

> "Games are not about their stories ... Story is just a context for player action and player choice."[290]

And they also pay attention to research, for example in interactive drama and AI **Chris Butcher**, one of the leading engineers at **Bungie Studios**, is one of them. He says that it is not possible at the moment to create believable emotional interaction with AI and therefore there is no use in trying for now. He therefore sees it as a theoretical field.[291]

> "In terms of game narrative, there's a broad spectrum of possibilities and implementation styles. On the one hand, there's Will Wright who's not even interested in telling stories to or with players, he wants to provide them with the tools to create their own stories. That's perfectly fine. I love Will and the fact that he exists. I love playing his games. On the flip side there are the roller coaster rides like Half-Life. I'm loving [The Legend of Zelda:] Twilight Princess right now. The Square-Enix games. Those are games that put you on rails, they're roller coaster rides. They're exhilarating, exciting, fun and challenging... all the things that games should be."[292]

Unfortunately, in all those attempts by academic research and the game industry or other new-media producers the question of how games can be integrated into narratives, seems to be small if not absent.

Machinima – whose makers use computer games to produce stories – represent a connection between computer games and stories. Therefore the question is: How can we make a story with game-elements without creating a computer game? Is it even possible to mix computer games and stories in this way?

Having detailed that stories and games are separate concepts but that they have connections, the next chapter will look into new possibilities to combine them.

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[290] Duffy, Jill: Gamasutra - GDC: Deus Ex Star Spector Questions Storytelling (Website)

[291] Langer, Jörg: Interview: Bungie, die Halo-Zukunft und KI-Entwicklung (Website)

[292] Sheffield, Brandon: Gamasutra.com -All For Games: An Interview with Warren Spector (Website)

4 Story and Game Combined

How can a combination of game and story be called? In most cases this work would probably be called a computer game. In fact, a lot computer games are a combination of these concepts. In my opinion, interactive drama, interactive storytelling, cyberdrama, hypernovel and cybernovel do not fit in this context as, in most cases, there are no game-elements included.

I will approach a combination of the concepts of game and story in respect to their different traits. In addition to that, I will focus on the story and not as done in computer games, on the gameplay.

The previous chapter is therefore the fundamental basis for my approach as I see stories and games as things that have to be treated differently. Based on this I will describe a way that distinguishes itself from the main approaches that combine game and story or interactivity and story.

But how is this different from computer games? In computer games the story is there to enhance the game experience. My approach is to add game-elements to enhance the story.

As hypernovels did not receive much attention from a wide audience, as interactive drama is still in academic research and as interactive cinema has not worked out, I will look for a new way to combine interactivity and story. For this, I will first analyse two computer games with narrative elements and then focus on the different answers to the questions: "Why do we enjoy games?" and "Why do we enjoy stories?" And finally I will describe the idea of a linear story with game-elements.

4.1 Rollercoaster Rides in Computer Games

> "The narrative frame has always seemed forced, irrelevant to what really matters: The game."[293]

There are a lot of academics who conceive cut-scenes as an unpleasant break in the user's agency. This position seems to derive from **Laurels** notions about agency in the human-computer interaction. Despite this theoretical position, the game industry seems to do well with cut-scenes and other breaks through non-interactive and sometimes narrative elements.

Mateas describes the position of the "anti-cut-scenes"-fraction well.[294] First he describes **Quake** with its three formal constrains:

> "1. Everything that moves will try to kill you
>
> 2. You should try to kill everything
>
> 3. You should try to move through as many levels as possible."[295]

He concludes that **Quake** provides a balance between material affordances and formal affordances. This is because in **Quake** everything you have to do is kill and everything you can do enables the killing. You do not need to talk to monsters and therefore you cannot talk to monsters.

Without ever having played it he assumes that in **Half-Life** this balance is out of order. Why? Because the cut-scenes create dramatic probabilities which have no counterpart in the material constraints of the player. Therefore the agency of the player is decreased.

This assumption is not elusive but what is not included in it is that the player's modes switches. Even if the player in **Half-Life** has the freedom to move around in the cut-scenes, they are perceived differently than the gameplay. The game-elements are still in balance since they do not interfere with the cut-scenes. Nobody expects to begin a discussion with an enemy just because somebody talked to him in a cut-scene. Nevertheless, there is certainly room to criticise the freedom during the cut-scenes as there is no explainable need for action. Still, this disregarding of cut-scenes is too single-minded. If we see **Half-Life** more in terms of an entertainment product which contains game and story, there is the possibility to see other benefits for the narrative elements outside the player's agency. **Half-Life** is not only about the gameplay,

[293] Juul 1999:39
[294] Mateas 2000
[295] Mateas 2000

but also about a world. This is obvious on the visual side with 3D graphics, but is also present in the information and emotions that connect a player with the world. This fact is even expandable. Outside of a certain product the "fan" enjoys other products of "his world" more than others. This is not only a suspension of disbelief but an active creating and/or enhancing of illusion most common and vivid in the fan-cultures of **Star Wars**, **Star Trek** or **Lord of the Rings**.[296]

Certainly, there are other arguments to make clear that it is not possible to reduce computer games to their agency. Another one could be that there are more player types than just the way academics might perceive games. For more on this see what **Lindley** has to say about player types, who also references **Richard Bartle**, **Nicholas Yee** and **John Kim**.[297]

Instead of criticising computer games such as **Half-Life** I will take a look at them to see how the combination of narrative elements in a game might work. To begin with, I will briefly describe two computer games and then their integration of narrative elements.

The first is **Half-Life** which was a success with game critiques as well as players and sales. The novelty regarding narrative elements was that the cut-scenes where not pre-rendered videos but scripted scenes inside the game in which the player still has the opportunity to move around. I do not believe that it changed the perception of the narrative elements as narrative elements but it tried to make a more fluid experience between game and narrative elements possible, which prevents the player to switch between a "lean-backward" and "lean-forward" mode. Another interesting fact is that the character never speaks, nor is he visible during the game. The player sees the whole game in a first-person perspective. Nevertheless, on the product box there is a huge image of the main character **Gordon Freeman**. So this was not a foolish attempt of the designers to make the player believe that the character in the game looks like the player himself, but instead it was an attempt to make game and narrative elements appear as coherent as possible in terms of appearance and agency. In my opinion, this is not based on the conception of narrative elements and gameplay as one concept, but is an attempt to create a concept that suits both modes of the game. Because of this, the player is not frustrated when he cannot influence the story which is in fact strictly linear. There is also a balance between formal and material affordances. Therefore, even with a high level of agency in the game, there can be a linear story regarding the narrative elements. This is why these kinds of games can also be called "rollercoaster rides".

The second game I am going to describe is **Diablo II**. This computer games uses cut-scenes in a classical way, meaning that they are pre-rendered animations which offer no interactive possibilities apart from skipping them. **Diablo II**, just as **Half-Life**, was a huge success. The perspective on the char-

[296] Although there is no direct translation from a story to a game a same "world" can be used in both.

[297] Lindley 2005

acter of the player, who can be selected from various types of characters, is isometric. The view is always centred to the character. The main goals are to kill monsters, collect items and kill Diablo. Even if it seems as if collecting items only serves the goal to kill the monsters, advanced players tend to kill monster (including Diablo) to get better items just for the sake of having them. Therefore, **Diablo II** can be seen to feed the hunter-gatherer-instincts. Unlike in the gameplay, the cut-scenes do not show the character of the player but a character who narrates the story-elements. The player arrives after these events in the place where the cut-scene took place and is therefore chasing the character of the story. Here, gameplay and story are clearly divided. Even if the player does not experience agency throughout the cut-scenes, I believe that they enhance the overall reception of the computer game.[298] Having played the game a lot, it is interesting what the strong and long lasting community and multiplayer function of **Diablo II** revealed. If the player has played the game one or even more times through to the end, which is not uncommon to do in the **Diablo II** community, differences between story and game become obvious. The game is built upon simple and functioning rules and therefore the game can be played more or less uncountable times, at some point the story is not important any more and the narrative parts are usually skipped. So **Diablo II** can also be seen as a "rollercoaster ride" as the story stays the same and has no "direct" connection to the gameplay.

An interesting similarity between the two games is that both are still being played by many people, but these hardcore-gamers do not have any interest in the narrative elements anymore. In fact, regarding **Half-Life** most gamers switched to the multiplayer modification of the game called **Counterstrike** in the long run which even evolved into a separate game where the story is not included any more. In **Diablo II** the narrative elements can simply be skipped. So in both games the hardcore-gamers worked their way around the narrative elements. Nevertheless, I assume that most of them benefit from the fact that they enjoyed it in the beginning.

My point is that the harsh critique of cut scenes like the one from **Roach**, calling them "rightfully maligned [and] a clumsy attempt at integrating story flow into the gaming experience"[299] is simply wrong. To say that they produce "disdain and cognitive dissonance in equal measure"[300] seems to be exaggerated if not unfunded. This position is also surprisingly as many game designers include cut-scenes intentional and as many players buy their games.

Roach's position of cut-scenes is even more surprising when he seems to see the scripted sequences of **Half-Life** as something completely different:

[298] At least I can tell it from my own personal experience and therefore can conclude that it is not the case that everyone perceives cut-scenes as a sort of unwanted break in the gameplay

[299] Roach 2005:289

[300] Roach 2005:289

> „Half Life 2 is an excellent example of the successful mastery of this principle. Narrative elements are embedded throughout the game world and are triggered organically in the flow of the experience – allowing the plot to be properly structured but without interrupting the pace of interaction."[301]

To avoid drawing conclusions solely from personal perception - which leads to very different conclusions, as you can see on my and **Roach's** arguments - more research into the field of player-types and player-styles is necessary, as well as investigating how we generally perceive games and stories differently and what connections do exist between them. Although I discuss some of these aspects in this chapter, an in depth research is beyond the scope of this thesis.

I agree with **Lindley**, when he suggests that narrative elements and gameplay cannot be discussed in such a one-dimensional way as by answering to cut-scene-critiques:

> „Another player referring to the same game may find its strategy for intermixing story and narrative to work perfectly well."[302]

I also agree with **Newman**[303], who constitutes that cut-scenes are misunderstood.[304] I even proclaim that cut-scenes can enhance the overall experience of a game and therefore I draw the conclusion that there might be the possibility to enhance a story with game-elements.

To further develop this idea it is necessary to look into how games and stories work in order to make a consistent proposition for the combination of enhancing stories with game-elements.

4.2 Why do we enjoy...?

Before we can try to answer the question of how game and story can enhance each other, we have to have some knowledge of how they work. There are a lot of catchwords which can be found in narratology and in ludology. The most popular ones seem to be immersion, identification, suspension

[301] Roach 2005:290

[302] Linley 2005:155

[303] Newman 2004:71

[304] Newman also lists some functions that utilise breaks such as cut-scenes.(Newman 2004:83)

of disbelief and agency. Exemplarily, I am going to discuss some of these terms and concentrate on different types of immersion. My main interest is to see if these concepts can be applied to stories and games in the same way or if they differ. An in depth review is beyond the scope of this thesis and even in the fields of literature and film theory, which have a much longer history than game studies, it seems that over time there have always been several theories explaining differently why readers or viewers enjoy[305] books or films.[306] Even these theories can hardly explain the whole experience. A lot of times, I will refer to film theories but this does not limit the conclusion to films only, as film as a narrative medium shares many traits with other narrative media.

4.2.1 Immersion

Murray[307] says that immersion occurs when one feels to be present somewhere else. There are many academics that see immersion as something that can happen equally in games and stories.

> "Ironically, the reader paging through Balzac or Dickens, or, for the matter, Judith Krantz, has entered into roughly the same immersive state, enjoying the same high, continuous cognitive load, as the runty kid firing fixedly away at Space Invaders."[308]

Ryan also compares immersion that occurs in literature to that in virtual realities.[309] **Newman** even states that immersion "has become a taken-for-granted trope in writings on technology."[310] There seem to be three kinds of immersion.[311]

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[305] I use enjoy here but arguably stories should and could also do other things like teaching. It is therefore a more philosophical question if in the end we do what we do to feel pleasure even if we sometimes do not see a direct connection between our actions and the pursuit of happiness.

[306] For example Eder (Eder 2006:135) states that attempts to describe the whole spectrum of reactions of viewers with terms like identification, empathy or parasocial interaction are too reductive.

[307] Murray 1997

[308] Douglas 2004:197

[309] Ryan 2001a

[310] Newman 2004:104

[311] In fact I am not the first person to describe different types of immersion. Ryan lists the following types: "spatial immersion, the response to setting; temporal immersion, the response to plot; and emotional immersion, the response to character." (Ryan 2001a:121) There are similarities to my distinction. For a closer look on immersion see Ryan (Ryan 2001a) and Murray (1997). McMahan who states that it "is necessary to break down the concept of immersion into its more specific meanings and develop a more specific terminology" is also interesting to read. (McMahan 2003:67) In addition Grau states that literary immersion differs fundamentally from the one created by visual strategies. (Grau 2003:15) This would subclassify the immersion into a world.

One is the immersion in a world. This can be enhanced through technology, such as surround sound, huge screens and CAVEs but this can also occur in the imagination whilst reading a book. Another kind of immersion is when we are immersed in an activity and we can immerse in the actions we perceive, whether they are recounted or not. As immersion is such a broad and vague term I want to approach the last two types of immersion from other theories, namely suspense and flow.

While immersed into a world, one can always tell that one is just imagining being somewhere else but the immersion in an activity seems to be a wholesome activity in which the agent does not imagine anything else. So when can we be immersed in which mode? Whilst playing **Pong**, the player hardly imagines himself to be in a black universe with only a few white elements floating around, but he can immerse himself in the activity of playing by focusing nearly all his attention on these few white elements. On the other hand, a reader can be immersed in the world described in a book without being immersed in the action of reading. A combination of both modes is also possible, for example in the case of someone playing a first-person shooter inside a CAVE. These examples are not meant to imply that one mode of immersion is game-related and the other one is story-related. I think both modes can be possible in both stories and games.

Murray called her book **Hamlet on the Holodeck**.[312] The holodeck is a utopia taken out of the science fiction series **Star Trek**. It is the utopia of total immersion. There are people who think that total immersion is a goal that should be achieved. Even before topics such as virtual reality and computer games were widely discussed, there where theories that included other perspectives to immersion:

> "German playwright Bertolt Brecht developed a theory of drama that was clearly against Aristotle's ideas; he argued that Aristotelian theater keeps the audience immersed without giving them a chance to take a step back and critically think about what is happening on the stage."[313]

What **Brecht** wanted was a counter-reaction to what happened during the NAZI-regime.[314] This is due to the fact that immersion "is characterized by diminishing critical distance to what is shown and increasing emotional involvement in what is happening."[315] There are also other theories which are less political and argue against the usefulness of total immersion. Film theorist **Christian Metz** claimed that cinema can only be enjoyed if one is aware of

[312] Murray 1997

[313] Frasca 2001a

[314] Gonzalo Frasca even suggests to implement non-Aristotelian ideas in computer games partly based on the ideas of Brecht. (Frasca 2001a)

[315] Grau 2003:13

watching a film.[316] **Jörg Schweinitz** therefore comes to the conclusion that computer games only work because players oscillate between immersion and distance.[317] **Murray** describes it more directly when she writes that there "is a discomfort in not knowing the limits of the illusion."[318] She proclaims that we have to define the boundary conventions for virtual environments to be able to "surrender to the enticements of virtual environments."[319] This makes sense, because if a recipient was totally immersed in a horror film he would try to run away, and if a player was totally immersed in a first-person shooter, would he really try to shoot as many people as he can?

The dilemma about immersion can also be rooted to the different goals of technical developers and authors. The technicians try to improve their virtual realities while the authors see self-reflection as a necessity.[320] History provides many examples for the contest between new illusions and the ability of dissociation.[321]

4.2.2 Suspension of Disbelief

Suspension of disbelief is a widely used term and I will therefore mention it, although only briefly. Suspension of disbelief can be seen as a prerequisite for immersion.

> "Suspension of disbelief is a mental state in which you choose, for a period of time, to believe that this pack of lies, this fiction, is reality. This applies to games as well. When you go inside the game world and temporarily make it your reality, you suspend your disbelief. The better a game supports the illusion, the more thoroughly engrossed you become, and then the more immersive we say the game is. Immersiveness is one of the holy grails of game design."[322]

Descriptions similar to this can be found quite often, nevertheless, I do not agree with these authors. We never think of fiction or games as reality as arguably, they would cease to be fiction or games if we did. But there is a suspension of disbelief in a second stage. At first, we know that we play a game, read a book or watch a film, but on a second stage, we can believe what is happening inside these "unreal" worlds to be something real. This process

[316] Schweinitz 2006:148
[317] Schweinitz 2006:153
[318] Murray 1997:120
[319] Murray 1997:103
[320] Büschner 2001:96
[321] Grau 2005:80
[322] Adams 2003:58

seems also be more accurate to what **Coleridge** meant when he coined this term.[323]

For example, playing **Diablo II,** the player does not actually think that this world is real and neither does he question that in this world demons and other creatures are real. Yet, this world is not free from the possibility of disbelief arising in the player and therefore has to be consistent in itself. If a daemon attacked the player with a rocket launcher, he could feel betrayed by the game designers, because this behaviour would not be considered to be "real" by the standards of the fantasy world of **Diablo II**.

As disbelief is therefore an active process and occurs only in a second stage, it is clear why **Murray** transformed the phrase thus: "We do not suspend disbelief so much as we actively create belief."[324]

4.2.3 Identification

Most of the theories about identification derive from psychoanalysis. **Freud** established the term identification. Theorists like **Lacan** and **Metz** brought it into film theory and it is also used in literature theory.[325]

It is the theory that we identify ourselves with the characteristics of someone else.[326] This can be subconscious. According to **Freud** there can be multiple identifications. [327] This means we not only have to identify with the main character in a work, but as the oscillation between distance and immersion is important, we also identify at first with ourselves and secondly with characters in the film.[328]

But what does this mean for computer games? Can we assume that we identify with **Gordon Freeman** in **Half-Life**? I do not think that this is what happens. We do not think that **Gordon Freeman** has certain abilities we can use to play the game but instead, we think that we ourselves have these abilities and are able to use them. A character is only there to position our field of action inside a virtual environment. We have these abilities inside the virtual environment and not anyone else. This is also the reason why the change or perspective is not so important to how we feel about our avatar. This becomes clearer if we take a look at tennis. We do not identify with the racket in the same way we do with a character in a film. In **Pong,** the white line is an ab-

[323] Coleridge 1817

[324] Murray 1997:110

[325] For overviews about film theory see Lapsley (Lapsley 2006) or Stam (Stam 2000).

[326] Metz states that „the spectator has the opportunity to identify with the character of the fiction." (Metz 1982:46) More central in his work is the identification with the camera which I do not discuss here even if this could not only be interesting for cinema but also for computer games. For example, Metz states "that the spectator is not amazed when the image 'rotates' (= pan) and yet he knows he has not turned his head." (Metz 1982:50) In a virtual environment, a user can also rotate the view without turning his head.

[327] Lapsley 2006:92

[328] Lapsley 2006:83

straction of our racket. In terms of identification, a character like **Gordon Freeman** is closer to a racket than to a film character.

To summarise, I would suggest to think that in stories we can identify with characters and in a game we are playing with a "virtual racket" or we are playing a character. Still, identification is not enough to explain the emotions involved in reading or viewing stories. Also, the term identification has been criticised of not being conceptual precise and empirically verified.[329] I will therefore examine emotions a little bit more.

4.2.4 Emotions

How do films and literature evoke emotions? Theorists and critics tend to view the works from a critical distance which often seems to neglect immersion, identification and emotions. Only recently, there has been a strong research in this field.[330]

Emotions are a reaction of the whole organism to stimuli which occur during a period of time inside the human or in his environment.[331] Emotions help us to filter information, to store them and are necessary to make decisions.[332] According to **Keil** and **Eder**[333] one of the models for emotions is the dimensional model. It focuses on a few attributes and dimensions instead of classifying emotions. The main attributes of an emotion are valence and intensity. In addition, there is also the control of the viewer over the emotion. The theory of emotions as a network-model suggests that according to these attributes, certain parts of a network are activated. This model can include spontaneous horror-effects and also empathy in melodramas.[334]

As stated earlier, the viewer of a film is aware of its communicative character and he is aware that what he sees is not reality. Therefore, his reactions to real and communicated events differ. **Andreas Keil** and **Jens Eder** come to the conclusion that there is a greater emotional distance which can enable a greater emotional intensity.[335] This assumption goes hand in hand with my previous critique on total immersion and suspension of disbelief.

Eder also describes ways of being close to a character.[336] He refers to a model from **Smith**[337]**,** which makes a distinction in the affective response to a character. On the one hand a viewer can feel with a character (empathy) and

[329] Eder 2006:148

[330] As noted in Grau 2005:77 and Eder 2005:107-108.

[331] Keil 2005a:225

[332] Keil 2005b:15

[333] Keil 2005a

[334] This is a more holistic approach and cognitive science will probably provide interesting results in the future.

[335] Keil 2005a :235

[336] Eder 2006

[337] Smith 1995

on the other hand a viewer can feel for the character (sympathy and antipathy).[338] Therefore a viewer can feel the emotions of the characters (empathy) or different emotions than the character (sympathy and antipathy).

Interesting for cut-scenes and also for the idea of integrating game-elements in a story is that **Eder** states that the level of closeness to a character is also related to the level of immersion into a world.[339] If a game-element increases the immersion into a world, it can therefore have a positive effect for the story's intensity.

4.2.5 Suspense

Suspense is commonly defined as the uncertainty about the outcome of actions.[340] In film, the term suspense and **Alfred Hitchcock** are often mentioned in the same sentences. **Hitchcock** usually created suspense in his films by revealing more to the viewer than to the character. A common example is from the book about **Hitchcock** by **Truffaut**: Suspense is created by showing the viewer a ticking bomb under a table while the characters sitting around this table do not know that it is there.[341]

To broaden the usage of the term suspense here, I am going to look into the reasons for identification or affective responses for and with characters being crucial, taking into account that the events are being recounted. These recounted events cannot be changed by the recipient, who feels for or with the character but cannot control the outcome. Therefore, suspense is not only seen or felt in thrillers but also in other films. Watching a drama, one feels for or with one or several characters and the tension, or suspense, is caused by the impossibility to act on the knowledge that something is wrong or something is going to be wrong.[342]

This adds another layer to the relationship of viewer and film or reader and book. As already described, we have to know that we are reading or viewing for the story to work, but the suspense exists because of a refusal to fully accept the fictional as fiction as full acceptance of the work's fictional character would not allow emotional involvement.[343] We always assume that these things

[338] Eder 2006:142

[339] Eder 2006:139

[340] The definition from Prince: „An emotion or state of mind arising from a partial and anxious uncertainty about the progression or outcome of an action, especially one involving a positive character." (Prince 1987:94)

[341] Truffaut 1983

[342] Even though I broaden the spectrum of suspense I do not intend to say that suspense is the only thing that derives from the relationship between character and viewer. Therefore I agree with Eder who states that many different relations can be established. (Eder 2006:147)

[343] This is the reason for the title of the book from Metz: The imaginary signifier. (Metz 1982) Even if in the case of Metz, watching a film is a process that has to do with imagining, it still signifies for the viewer.

could happen to us. Might this be out of increasing the experience without danger as in simulation or might it be that this is a basic skill that is needed for societies to function, even to have the simplest relations to other human beings.

These emotional responses work in unrealistic (fictional) settings. If in a film the character is being followed by a monster we imagine this to be unpleasant even if we have never been followed by a monster and even if we know that there are no monsters in reality. Because of this suspense, the viewer or reader reaches a state of immersion.[344]

This is a huge difference between the perception of games and stories. In stories, emotions are heavily influenced by the fact that we cannot act, whereas in games, we can influence the events taking place. This could also be the main reason why interactive films have failed. With the opportunity to make choices during the perception, the story looses its suspense. We can also say that the idea of a dramatic arc is not working because a dramatic arc can be conceived as a way or a schema of how to create suspense inside a story.[345]

Now we have an idea of how suspense as described above cannot work in computer games[346] mainly due to the player's possibility to influence the events. Therefore I want to take a look into the concept of agency.

4.2.6 Agency

Laurel and **Murray** coined the term agency. Agency is the empowerment that we feel when we take actions and when these actions lead to the outcome we intended.

> "Agency is the term […] to distinguish the pleasure of interactivity, which arises from the two properties of the procedural and the participatory. When the world responds expressively and coherently to our engagement with it, then we experience agency."[347]

Murray suggests that agency can be used to improve cyberdramas:

[344] Ryan mentions suspense in conjunction with temporal immersion when she lists four types of suspense. (Ryan 2001a:143-145) But in the way I described suspense here it would consist of two of her types of immersion: temporal and emotional. This is where - due to my approach of describing immersion - my classification differs.

[345] If we would consider suspense as the main reason for the dramatic arc it could be argued that there is no need for one in interactive drama.

[346] Important to note is that I am not saying that suspense is not possible in computer games but only the one I described here.

[347] Murray 2004:10

> "In an interactive story world, the experience of agency can be intensified by dramatic effect."[348]

As stated earlier, this agency is counterproductive to the way drama works, but what **Murray** is suggesting here, is not drama but dramatic effect. This is another example of how confusing it is to consider games and stories to be the same. What **Murray** means is that agency is enhanced when the emotional or physical perspective is changed. This has nothing to do with drama but with the kind of effects our actions have. To this I can agree because what she describes as a cyberdrama is, in my opinion, either a game or a simulation and not a story.

Laurel describes the prerequisites for agency. For example, she states that agency needs constrains. Usually, simple computer games have very good constrains. In **Pong** you can only go up and down because these are the only movements necessary to be able to play the game. Even though **Laurel** and **Murray** coined the term agency not everything they wrote about it is acknowledged:

> "Contrary to some theorists' beliefs [That of Murray and Laurel.], the existence of tools intra-frame or extra-frame does little to disrupt the user's immersion in the interactive."[349]

Since agency is strongly connected to the ideas of **Laurel** and **Murray** the following chapter will discus how agency can lead to immersion with the theory of flow.

4.2.7 Flow

> „Once immersed in playing, we don't really care whether we rescue Princess Toadstool or not; all that matters is staying alive long enough to move between levels"[350]

One of the modes of immersion is being immersed into an activity. The psychologist **Mihály Csíkszentmihályi** calls this state flow. Flow cannot only happen during play but in almost any other activity.

Narratology refers to **Aristotle** a lot, and so does **Csíkszentmihályi**. **Aristotle** not only talked about drama but he also stated that humans seek

[348] Murray 2004:10
[349] Douglas 2004:198
[350] Fuller 1995:60

happiness above everything.[351] **Csíkszentmihályi** describes flow as a way to seek happiness.

> "The best moments usually occur when a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile. Optimal experience is thus something that we make happen."[352]

While reading can stretch a person's mind to its limits, it seems that this stretch to one's limits is more likely to happen during play.[353] **Csíkszentmihályi** explains further that the optimal experience of being in the state of flow occurs in situations where we can put all our attention into our goal and where there is no threat we need to defend ourselves against.[354] This state is often provided in computer games, because they are normally not perceived as causing real threats.

The theory of flow also refers to the learning aspect because after an experience of flow, the self is more complex as it has overcome a challenge in a concentrated way.[355]

When an experience is considered most positive, people mention one, or often all, of the following:

- tasks with the chance of completing
- ability of concentration
- clear goals
- immediate feedbacks
- deep but effortless involvement without thinking about everyday live frustrations
- a sense of control over the action
- less concerned with the self which seems stronger afterwards
- alternative sense of time[356]

One of the key elements is that the activity is autoelective. This means that activities are motivated intrinsically, although **Csíkszentmihályi** states that almost no activity is purely autoelective.[357] He also mentions play and games as being activities which help participants to experience flow. He also maps his theory to the types of play by **Caillois** mentioned briefly in the last chapter.[358]

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[351] Csíkszentmihályi 1990:1

[352] Csíkszentmihályi 1990:3

[353] I think flow can be achieved by playing but in this initial statement it seems to be included that it cannot lead to happiness if playing is not seen as something worthwhile.

[354] Csíkszentmihályi 1990:40

[355] Csíkszentmihályi 1990:41

[356] Csíkszentmihályi 1990:49

[357] Csíkszentmihályi 1990:67

[358] Csíkszentmihályi 1990:72-74

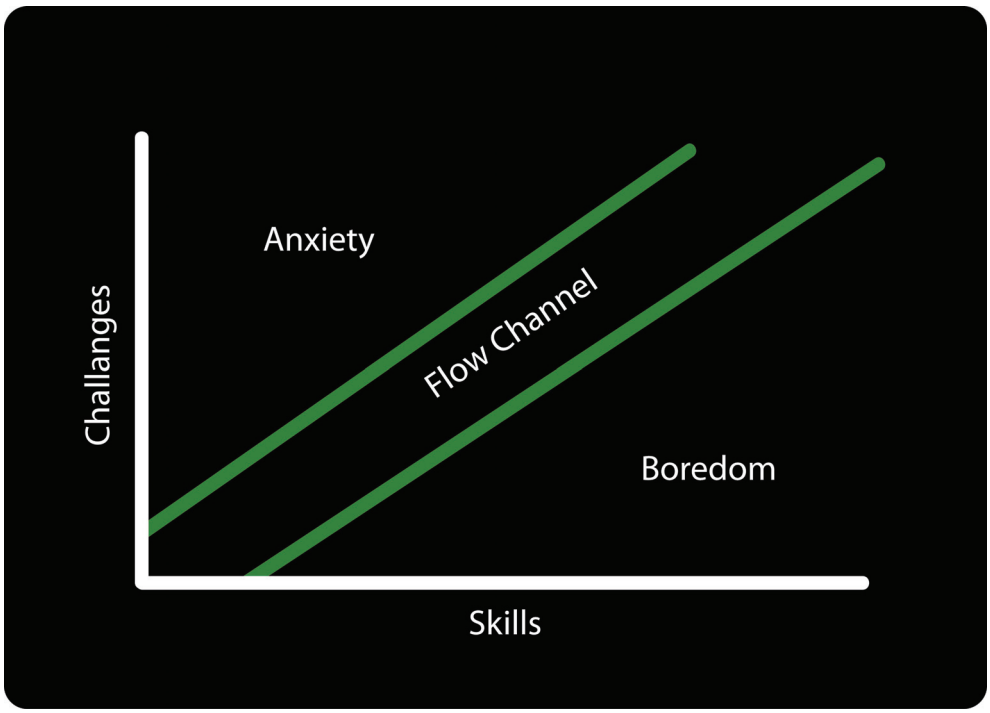

Figure 2: Flow Channel

The core of the flow theory is to become transformed into a more skilful self by mastering challenges. These challenges have to have the right difficulty in order to prevent boredom on the one hand and anxiety on the other hand.[359] One of the main challenges for game designers is to keep the players in the flow channel, as pictured in figure 2.

Jenova Chen wrote a thesis about flow in games and concluded:

> "1. As a premise, the game is intrinsically rewarding, and the player is up to play the game.
>
> 2. The game offers right amount of challenges to match with the player's ability, which allows him/her to delve deeply into the game.
>
> 3. The player needs to feel a sense of personal control over the game activity"[360]

In game design the dimension of time plays an important role. Some people learn faster than others and some players want a different ratio of chal-

[359] Csíkszentmihályi 1990:75
[360] Chen 2006

lenge and skills.[361] A game like **Diablo II** is designed to accomplish this. In the game, it is possible to finish the levels quickly and therefore the challenge increases, or it is possible to stay in one level and acquire more skills. Interesting here is that primarily the skills of the character improve and not necessarily the ones of the player.[362] Therefore, it is possible to say that the real challenge is to improve the character's skills, rather than the more obvious challenges of fighting monsters. Either way the open spaced levels provide a good environment for flow experiences.

I do not want to exclude the chance of experiencing flow by watching films or reading books, although it seems more likely to experience flow during games than through stories. Besides this, there is also another way how we could map flow to for example watching a film. The idea is that flow can be perceived in a passive state. The flow emerges not through the activity of watching but through the dramatic arc which builds up a challenge for a character (normally called a conflict) and resolves it. This could be seen as a movement in the flow channel. This would make suspense and flow more similar. There is always suspense in moving towards the next goal and reaching that goal. In regards to an activity it means that we can work long and hard with joy if we are in a flow channel and in regards to stories it could be the constant wish of perceiving them.

4.3 Linear Story with Game-Elements

There is only insufficient knowledge about how stories and games work or why they are enjoyable. Since they are both core human activities, knowledge about how they work would answer many unanswered questions about humankind. The concepts described above will form the basis for the following chapter.

Going back to the widely used term immersion, it is clear that there are actually several modes of immersion. Since immersion is a very broad term, it is not surprising that there are several ways to feel immersed. As already stated, the different types of immersion are not the only way people can enjoy games or stories. It is also important to see these different types as indicators of stories and games working differently.

[361] Jenova Chena mapped player types and skills in the graphic of the flow channel in a way which I cannot agree with. I think what he missed out is the dimension of time. (See also Chen 2007.)

[362] This is an interesting fact because a player seems to connect the skills in the game with his own skills.

One of these modes is the immersion into an activity which can be described by the theory of flow. Another one is the immersion into perceived events in which a major but not the only role seems to be played by suspense. Here, suspense is seen as a broader concept, as created by the impossibility to act on events we perceive. And then there is the ability to feel, even if only in a second stage, present somewhere else, a feeling that is created by illusions and virtual realities or by imagination.

None of these modes of immersion can exclusively be used for games or stories, but the connections between flow and games seem to be stronger than between flow and stories in the same way that the connections between suspense and stories seem to be stronger than between suspense[363] and games. In contrast, the immersion into the world seems to be equally possible in both games and stories.

It might be immersion into the world that holds together different elements such as the gameplay and cut-scenes of **Diablo II**. But immersion is not the only factor that holds these elements together. Suspense created by the different cut-scene-episodes can help to set a goal for the gameplay, to reach the next level and therefore see the next episode. There seems to be a lack in film theories of how several films of the same universe influence each other in regards to the perception of a viewer. To simply label these films as an act of Hollywood-commercialism seems to be too easy and underestimates their connections.

As mentioned earlier some theorists are of the opinion that cut-scenes interrupt gameplay in a destructive manner. There does not seem to be much ground for this opinion and it might be that one of the reasons for arguments like this was the urge of ludologists to dissociate themselves from narratology.

Just as I think that cut-scenes can enhance a game, I believe that there could be a way that game-elements can enhance a story, but how to combine these different concepts? As a starting point, I will look again into interactive drama. I already said that I consider interactive dramas to be simulations. Their attempt to combine story and interactivity resulted in a simulation. Their approach is still interesting and new types of games and simulations could arise when and if AI improves to the necessary level.

As interactive drama shows to combine story and game, they have to be separated at first to not diminish one of them. The story still has to be a recounting of events. For example, if the player was to act in every important moment of the story suspense would be lost. This is a problem for interactive drama and also for hypernovels. In addition, the direct decision in a complex story with deep characters would end up in the problem of very low agency that interactive cinema has. This is one of the main problems that interactive drama tries to solve. A linear story can be a solution and there is evidence that

[363] I am still referring here to the suspense I described above. Of course, games can also evoke suspense but mostly in a different way.

a linear story can work together with interactivity if we look at the many successful computer games which are "rollercoaster rides".[364]

Therefore, the idea is to not involve the viewer in important decisions of the story, but how could agency be provided for the participant? My assumption is that it might not be necessary to provide the participant with decisions that matter for the story, but instead his actions could be important only within the game-elements. In cut-scenes the player has no control over what is happening and as they are clearly perceived as non-interactive elements, the player does not feel a lack of agency. My suggestion is to connect the game-elements and the story not through important decisions of the player but through the world itself. Even little events in the story can be clear goals for a game. If the goal has no influence on the story, it can still provide a channel for a flow experience. An important aspect is that the outcome of the game does not influence the story in the end. The story cannot be controlled by the user.

The idea behind this is that there can be a connection between game and story beyond the current theories. Part of it could be the immersion into a world and maybe the emotions of the story can spill over to the game-elements and vice versa. Also, just as cut-scenes, the story can be used to set the goals of the game-elements. Due to the contrast of the different experiences of game and story, the agency of the game-elements could also increase the feeling of suspense because of an enhanced awareness of the impossibility to act during the story elements. Above all, the connection through the world and the linear story leads to some early conclusions for the design of a concept. There cannot be game-elements that are unrelated to the world, for example randomly appearing game-elements like **Tetris**. And it seems best for the player to not play the character during the game-elements since this could eliminate the suspense during the story. Of course, there are also new traits for such a concept. Game-like participation is partly possible but nevertheless, the main element is still a story and therefore the repeatability would probably not be comparable to that of games.

With this idea of combining game-elements with a story I do not intend to make better stories nor do I intend to replace any existing form. Instead, I will try to broaden the spectrum of the ways to combine story and game. I want to search for new ways and to come to a better understanding of games and stories. I also want to proclaim that interactivity does not always enhance the experience and therefore this can be seen as a counter reaction to new media approaches such as hypernovels and interactive cinema which derived from new technological possibilities.

I will not describe this idea in this chapter in more detail, as I intend not to exclude different forms from the start. In the following chapters, I will create a concept as one way of how to put these thoughts into practice. An ideal tool to create a concept like this is machinima. The interactive potential

[364] A quiet different approach to combining interactivity and story can be seen in Sander 2008.

of machinima makes it possible to combine story and game-elements in the same virtual environment. It is one of the many possibilities that machinima offers. Therefore, I will consider a realisation with machinima for my concept.

5 Multipurpose Concept

This chapter contains a jump from theory into practice. In the previous chapters I discussed machinima, games, stories and the idea of combining stories with game-elements. From this chapter on I will apply these thoughts to one concept and two ideas.

Because my concept should be based on a story this is one of my first topics, but before I come to this I want to take into consideration some points I stated about machinima which will have an effect on the whole concept.

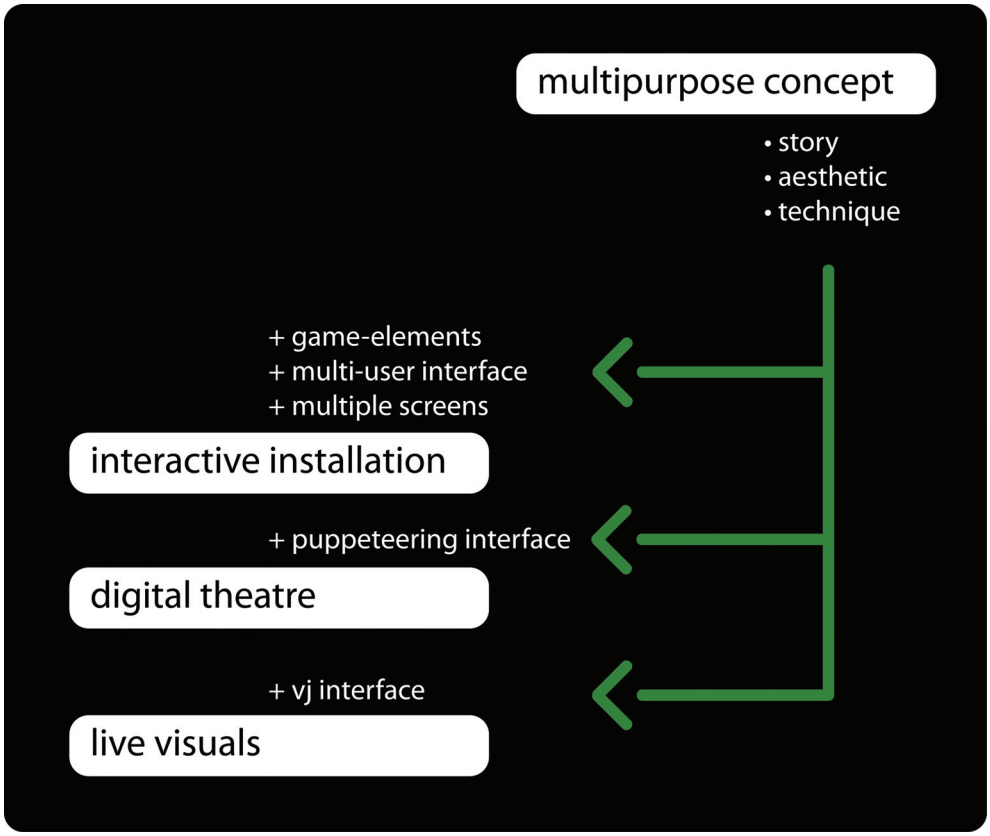

Figure 3: Multipurpose Concept

This chapter will therefore show the approach to and the starting point of my concept which will include the story and some basic decisions about

aesthetics and technique. In the following chapters, three ways of how to use this basic concept will be presented. One of them will be an actual concept and the other ones will be ideas that are described briefly.

The jump into the practice means that I have to move from the general discussion to looking into concrete decisions. I do not want to imply that this concept is the only or the best way. There are several ways of using machinima's interactive potential and there are several ways of combining stories and game-elements. This is one example of how a combination of these two can be achieved.

5.1 Problems and Solutions

In order to address a broader audience, a story unrelated to certain computer games is needed. Working on non-game related machinimas has several consequences. These are mainly caused by the films not being part of a fan-culture and therefore addressing an independent audience. I want to name three problems and offer solutions for them: New assets are needed, some requirements are not directly met by the engine and the graphical quality has to compete with other types of animations. I want to suggest some measures to address these disadvantages.

The problem with using only own assets is that there is a wide spectrum of content that has to be produced.[365] Assets are the content of the game. This can include 3D models, textures, animations, sound, music, speech and text. Basically it sums up everything that could be presented to the player.

There are actually two problems hidden in this. One is the amount of time needed to produce assets; the second problem is the need for different skills. The first one can be limited by the individual concept for a machinima itself. Many machinima makers tend to produce epic and action loaded works because these elements are often part of the games. Instead of making these bombastic works of lesser quality than common live-action or animated films, the overall quality of a machinima might benefit if the makers concentrated their efforts on a few elements. Machinima productions have mostly no or low budget. This has to be taken into consideration for the concept. This does not necessarily mean to cut the outcome. Independent cinema shows that it is possible to do great work with little money. One solution is to work with the limits in mind. Another is to work together with people who are doing it out of a passion for free like most machinima makers. The third solution is not to enhance the production process but the outcome by using the assets in multiple

[365] This is also necessary with other animation techniques than machinima but since machinima can be used easy and fast this diminishes machinima's benefits.

ways. One way to do this is by making series. Another one could be to use the concept in different ways. I want to use every solution for the asset-problem and therefore work together with people on a carefully planed concept with multiple ways to use the assets.

The second problem has to do with the constraints of the engines. The game engines are produced to suit a tight set of purposes. To give an example: In most game-engines, it would be difficult to show someone eating or to show a couple hugging and kissing. There are different ways around theses problems. One is to not include these elements in the story. The other is to show things as if they are happening. This is a solution which is being used by many low budget horror films with great effect: The horror can even increase if the evil monster cannot be seen. If there is no way to show someone chewing, there are cinematic solutions to this problem. For example: A man grabs bread and lifts it to his mouth. Before the bread reaches his mouth, we cut to a person who is watching him eating and we only hear the noises of chewing.

To conclude, there are two solutions to the problems caused by constraints of the engines. One is to leave out things which would not be possible without tremendous effort and the second is to use cinematic workarounds.

The third problem is the graphical quality. The audience's expectations towards graphics in games and in animated films are different but as soon as we are making an animated film using games, the non-machinima maker and the non-gamer will expect the quality of an animated film. If we want to make animated film using games, this is an immanent problem. There is no solution which would allow the different qualities of the graphics to be levelled out. The solution has to be to concentrate on the origins of the games. Games are different because the animation has to be calculated in real-time. As already suggested earlier, I want to use this advantage to use the real-time possibilities and include them by the use of interactivity.

Another way around the problematic graphics would be the enhancement of the visual quality. From my point of view it is not good to try to be as realistic as possible, at least not in the production of machinimas. This effort results in the problem described earlier with the hypothesis of the uncanny valley. In fact, there is not only the problem of the rendering's attempt to produce a realistic look. There is also a gap between the different parts building the visual aesthetics. Often, textures look very realistic as they are very often photos of real objects, but these textures are only used as realistic objects in some parts, for example, if used as patterns, they become unrealistic. Another problem is the way people are animated. They might look realistic in a picture, but as soon as they move they become unrealistic because of the way they are animated. Machinima has the additional problem that some movements are animated a lot better than others. For example, the fighting moves are usually very good but to grab an item from a table seems very unrealistic. There are huge differences of realism in the assets of a game. Once again this is generally not a problem during gameplay, but for machinima it is.

There are three solutions I suggest for this problem. One is not to try to be as realistic as possible. Another one is to define a style for all the assets that in the end matches and feels right. I already mentioned the last one. It is the assumption that viewers do accept the lesser visual quality because of the interactivity and do not compare it to traditional animated films.

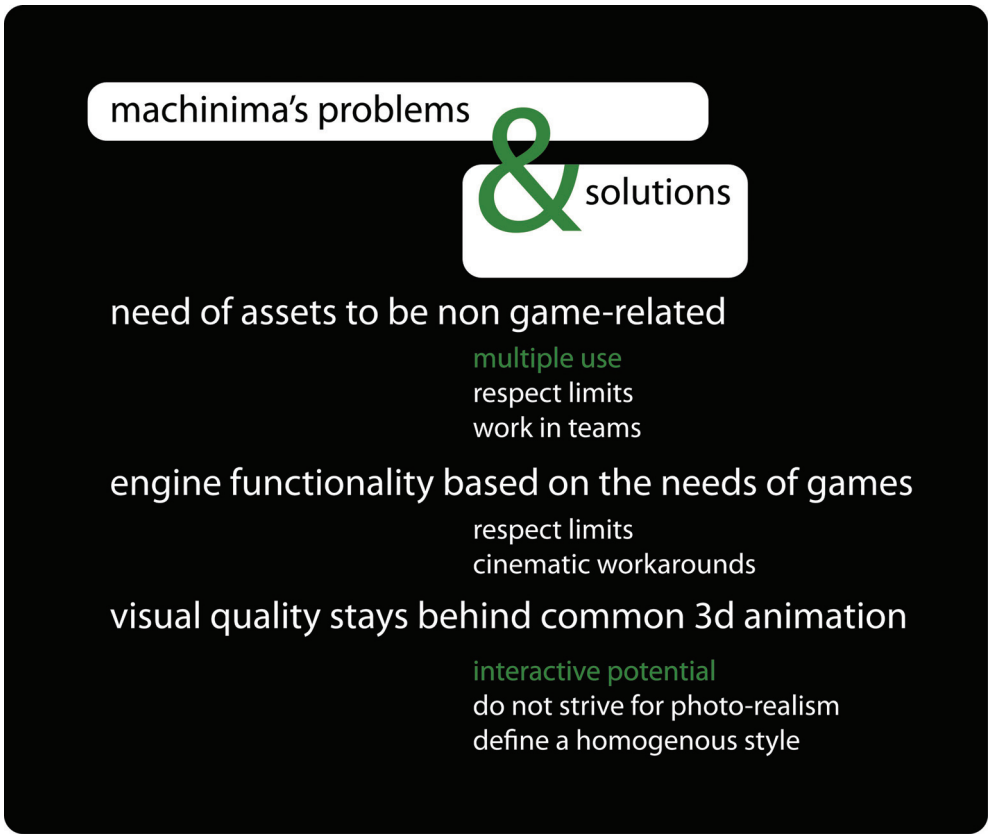

Figure 4: Machinima's Problems and Solutions

Figure 4 shows an overview of the problems and solutions. The two solutions important for this thesis are highlighted: multiple use and interactive potential. The first one is the reason why this chapter is called multipurpose concept since this basic concept is used in three different ideas. The second one is combining the two theoretical parts of the thesis, the discussion about machinima and the discussion about combining stories and games.

5.2 The Story

The story I am going to use is a short story that I wrote a few years ago. In the following chapter, I will present a short description of the events. The original version is lost and a rewritten version in German can be found in the appendix of this thesis. There are several reasons why I use this story for the concept:

- It is short.
- It does not require many assets.
- It would benefit from a non-realistic look.
- The specific world enhances the relation between story and game-elements.

Short version of **Dead Flower** (19.05.07):

1 Appearance

A woman appears in a desolate landscape. She seems lost. After she overcomes her enormous fear, she starts to walk. But nothing seems to change around her. After a while she gets tired and later she is too weak to walk on.

2 Bucket

She sinks down on the dry and dusty ground. As she reaches the ground, she notices an object. Hope gives her strength and as she comes to the object she finds out that it is a bucket with a hole in it. She looks through the hole and sees a well through it in the distance.

3 Well

With the bucket she moves to the well and fills it up. But the liquid vanishes fast through the hole. She drinks some water and then she waits. Sometimes sitting and sometimes standing on the well's masonry. Finally the woman moves on, still carrying the bucket.

4 Flower

After a while she looks up into the sun. Her view becomes blurred and a teardrop runs down her face and hits something on the ground. The woman bends down and discovers a dead flower.

5 Watering

She runs back to the well, fills up the bucket and runs back to the flower but only a few water drops are left, the rest has run out through the hole. She runs back and forth with the bucket several times and finally she bends down again and finds that life is returning to the flower.

6 Flower Field

Full of excitement, the woman jumps up and at this moment she sees new flowers growing where she spilled the water through the hole in the bucket. She hardly believes her eyes but finally she moves on spilling water around the well. After a while a sea of flowers is growing around the well. The woman hops around happily and lies finally down in the new colourful meadow not noticing that the first flower - now being without water again - is already dying away.

5.3 The Aesthetics

The aesthetics orientates itself mainly on two things: the story and the problems and solutions of machinima. As the idea is to realise such a concept in a team, there will only be a brief outlook on what the aesthetics could be.

First of all, the whole work should be minimalist. As the story is minimalist and benefits from a carefully chosen style, it is also good to respect the limits of machinima. The idea is that the world consists only of the elements mentioned in the story. The world is therefore a huge empty landscape. The only colour besides black and white will be red. Therefore it will be possible to highlight the growing of the flower with a strong colour. Red is chosen because it is a symbol for the energy and passion which is kindled in the character by the flower and it is also a symbol for danger and death as the flower is dying again in the end.

The design of the elements of the world should all be in one style. This style is again dependent on the people working on the concept and also on the technical possibilities of the technique. The goal here is to define a unique style which is not photo-realistic. This can lead to various directions ranging from low-poly-experiments which would highlight the artificiality of the representation to the use of cel-shaders which would refer to older animation-techniques.

Just as the visual style, music and sound should also me minimal. As for the sound, every noise will be clear and separable from other noises as there is nothing in the world to echo or transform the sound. The music should also consist of a minimal use of instruments. Both could be very minimalist at the beginning and get a little bit richer at the end.

The whole concept is very minimalist and instead of being photo-realistic this could be seen as an abstraction of reality. Abstraction has the benefit to concentrate on certain things. As in puppet theatre or in many painting styles this is used with great benefit for the works. At the beginning of CGI, abstraction was the only possibility to display graphics and there is a

striving from this abstraction to photo-realistic rendering.[366] This movement is strongest in first-person shooters and RPGs. Other computer-games never got away from abstraction. But in first-person shooters there seems to be first signs of abandoning the photo-realistic-path with games like **Team Fortress 2**, which is using cel-shaders.[367]

5.4 The Technique

To learn how to handle an engine and work with it is a great task and a lot of skill and time is necessary. Because of this and for the benefit of reusing certain parts (such as code-snippets, scripts …) one engine should be chosen for all purposes of this basic concept.

As described in the machinima chapter, there are four basic techniques to make machinimas. To be able to include game-elements in the machinima, code has to be scripted or programmed. Similarly, a good option to modify the games has to be provided in order develop the interfaces of the other ideas. This does not necessarily mean that the story parts have to be scripted as they could also be recorded with a technique such as recamming. What is important for the choice of the engine is mainly the possibility to implement interactivity. The actual use of techniques depends on the respective concept or idea. In the interactive installation, the story parts could be scripted whereas in the digital theatre play and in live cinema it would most certainly have more in common with virtual puppeteering.

Today, there are several engines which can be heavily modified. To minimize the number of possible choices, I only include newer game-engines. I also concentrate only on engines that are used in machinima culture and will not investigate stand-alone-commercial or open-source engines.

These are therefore the short-listed engines (and computer games):

- **id Tech 4** (**Quake 4**)
- **Unreal Engine 2.5** (**Unreal Tournament 2004**)
- **Unreal Engine 3** (**Unreal Tournament 3**)
- **Source Engine** (**Half-Life 2**)
- **Cryengine 2** (**Crysis**)

[366] For an article about abstraction in computer games see Wolf 2003.

[367] Huber states that Will Wright "has described a trajectory for the development of videogame aesthetics that recapitulates the history of representation in western painting: a slow rise through realisms, constrained and founded on technique, culminating with dissolving in impressionism and the abandonment of the realist enterprise and the opening of aesthetic freedom." (Huber 2007:211)

An extensive comparison of those and other engines would be great but is outside the scope of this thesis. I investigated the different engines and decided that the best for this purpose would be the **Unreal Engine 3** (UE3). This has several reasons, some of which are listed below:

- UE3 offers a way to communicate with other PCs and/or software over TCP.
- There are many tutorials for the beginning of the learning process.
- UE3 has a strong community working on modifications.
- UE3 is well documented.
- UE3 is running on my computer.
- UE3 offers a strong scripting language.
- UE3 is a recent and critical acclaimed engine.

6 Interactive Installation

In this chapter I will describe a concept for an interactive installation. Two main aspects are of high importance here, since they are based on the theoretical part of this thesis: I am going to use machinima and I want to combine a story with game-elements.

A concept for a project like this could be realised and described in many ways. I will concentrate only on a few things and leave several out, for example I will not look closer into game design for the concept of the game-elements.

This chapter will contain the following items:

- The use of space inside the installation
- Multiuser Interface Device
- Enhancing the story with game-elements
- The setup of the installation

To give an overview of the concept, I will describe it briefly at the beginning. The installation consists of multiple displays arranged in a circle facing inwards. In the middle, where the participants are interacting, are a projection on the ground and a camera on the top. The story will be told on the displays. The participants can interact through their positions inside the circle of displays. These positions are detected through the camera. They have to interact together to accomplish certain goals. During the game-elements a projection on the floor shows the field in which the interaction is taking place.

One of the main ideas behind creating this concept for the installation is that the independent DIY approach of machinima should be used. This means that the techniques used should be easily accessible for creators and that the cost of the installation should not be too high.

6.1 The Use of Space

Since the displays form a circle, there is automatically an area declared for the participants. The camerawork can now correspond to this setup in different ways. These can be divided into two main types:

- A panoramic view, as if the participants are standing inside the virtual reality.
- A non-panoramic view which can used in several different ways, for example with different perspectives on the same object.

As the positions of the participants play an important role, this integrates the real environment of the installation into the virtual environment, this set-up could be considered to represent a mixed reality, a term coined by **Milgram** and **Kishino**.[368] A mixed reality environment "is one in which real world and virtual world objects are presented together within a single display".[369]

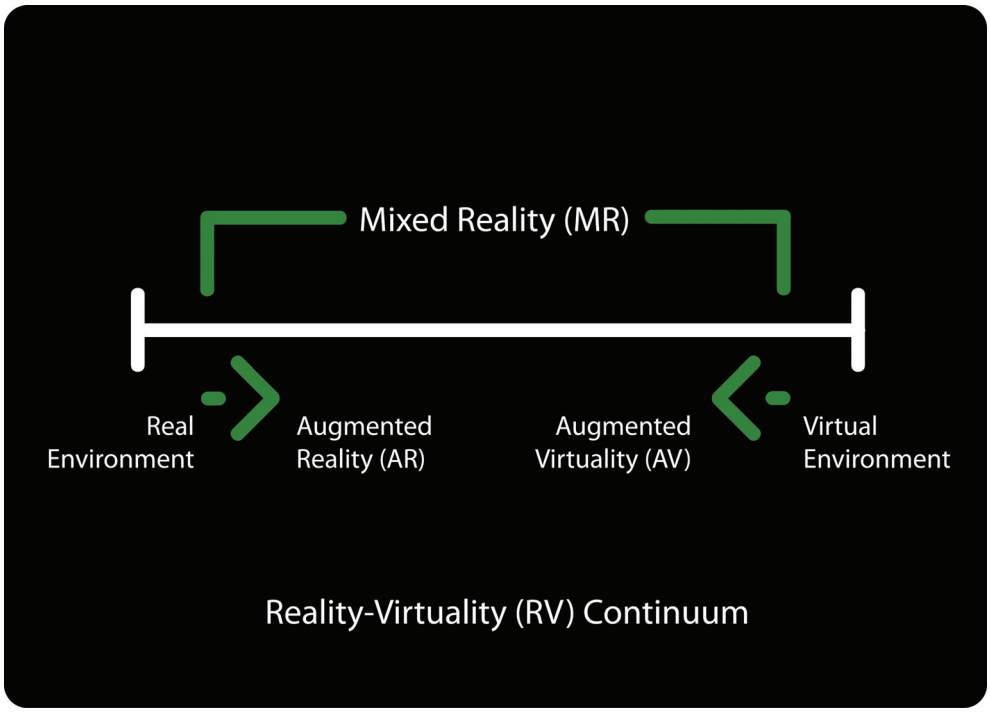

Figure 5: Reality-Virtuality (RV) Continuum[370]

In the fields of mixed reality and in virtual reality, game engines have been used for a few years now, as in projects like **ARQuake**, **QuakeRunner** or **CaveUT**, already mentioned in chapter 2.

[368] Milgram 1994a
[369] Milgram 1994a
[370] Milgram 1994b

The definition by **Milgram** and **Kishino** of mixed reality is very narrow. The concept I will introduce here is therefore not a mixed reality.[371] This makes sense as, for example, the movement of a mouse in a real environment would already have to be considered to be mixed reality if it is connected to a virtual environment, which it normally is.

In the concept of the installation there is a strong relationship between the participants and between the participants and the virtual reality. These relations are created through the interface setup in the installation. The real movements and the real social contacts of the players are very important for the virtual reality and, regarding the whole installation, it is possible to say that real and virtual actions are mixed together. However, there seems to be no common typology or classification for this type of scenario.

As new games make high-end technology available for many people, and as new interfaces, for instance webcams with tracking devices or the **Nintendo Wii Remote** become available for a mass market, the opportunities to build new concepts around these accessible technologies are as vast as never before.

To experiment with the new possibilities, I will include several different ways of how to relate the virtual world and the real world:

- In the game-elements, the projection on the floor is showing the relevant environment for the gameplay. In addition, the displays are showing the world around that gameplay in a panoramic view. They connect the game-elements with the story since the gameplay happens inside the world of the story. The positions of the participants influence the game.
- At certain points in the story, the positions of the participants can influence the perspective:
    - When a participant is close to one of the displays, this participant can change the perspective of the current view of the display. The relation between the participant's movement and the change of view should be similar to that of a real window. If the participant moves to the right, he can see more to the left and vice versa. [372] If he moves forward, his field of view widens. In this mode, without the influence of a participant, the displays show the virtual world in a panorama.
    - When the displays show several perspectives on the unfolding story, the participants interact together to modify the

[371] Even if there seem to exist some other positions to this tight definition. See Herczeg 2006.

[372] This would be similar to Johnny Chung Lee's examples of how to use the Wii Remote for head tracking, but because of the different circumstances in this concept it will be not as precise as the version from Lee. For information see his TED talk (Lee, Johnny Chung: Johnny Lee demos Wii Remote hacks | Video on TED.com (Website)) or visit his website (Lee, Johnny Chung: Johnny Chung Lee - Projects - Wii (Website)).

perspectives. The position of the calculated centre of the participants in the circle influences how close the shots are. The closer the centre is to a display, the wider is the shot and vice versa. This could even be reversed during the story. Since, at the beginning, the character is frightened and the participants cannot get closer, in the end, the character is happy and if the participants move closer to the camera, they also get closer to the character.

- Another way of how the participants can influence the story is at the beginning. The character is scared and if someone comes close to a display where the character is displayed, she runs away.

6.2 Multiuser Interface Devices

For many years now, it has been normal for every personal computer to be delivered with two standard interface devices: a mouse and a keyboard. In recent years there has been a change. Especially mobile computers come often with webcams and microphones and for gamers there are a lot more common game controllers nowadays than the standard joystick or gamepad, there are dancepads (because of the success of **Dance Dance Revolution**), guitars (from the game **Guitar Hero**), the **Gametrak**, the **Wii Remote**, the **Eye Toy** (a webcam for the **Sony Play Station 2**), the **Wii Balance Board** and so on.

In addition, there is a huge area of not so widely spread interface devices used for example by scientists or for interactive art like the **Berlin Brain-Computer Interface**[373]

In a multiplayer-game, it is standard for each of the players to use the same kind of device, but there are certain restrictions in the case of an installation or in similar fields of use. For example, it is unknown how many people will participate, the devices have to be very robust and the participants have to be trained to use them.

For years there has been the idea of multiple participants simultaneously interacting with a system through image detection. Early ones, such as the **Cinematrix Interactive Entertainment System** presented at **SIGGRAPH** in 1991, achieved this through the use of additional tools, in this case coloured reflectors. [374] In 2002 **Maynes-Aminzade**, **Pausch** and **Seitz** developed techniques without the need of devices for the players.[375] Similar tech-

[373] Krepki 2007
[374] Carpenter 1994
[375] Maynes-Aminzade 2002

niques where already used for single-player applications like the **metaField maze** from 1999.[376][377] In all of these, the image is analysed with different algorithms. Since basic algorithms are available for free for many applications due to **FreeFrame**[378] and similar projects, it has become quite easy to use a webcam as an interface device.

I am going to use this technique of using a camera to track multiple participants. It is not only a very good technique to capture the positions of the participants and use this as an input for the interaction, it has also other advantages. With multi-user interfaces like this, the social aspect is very important.

> "The gaming situations are simple, so are the installation and the interaction. But these games are not for single user purposes, even if only one or two persons can interact at the same time. These games have to be experienced in a group, comparable to a Karaoke evening with friends. Here again, the accurate user interaction is embedded into a communicative group experience which counts more than the fascination of the game play alone or the complexity of the simulation on the screen."[379]

An additional benefit of this technique is that a change between a more active (game-element) and a more passive (story) state of the participant can be more fluid. During the game-elements, the participants can interact direct and easily and during the story, they are not holding any useless device in their hands and are therefore not forced to ignore the interface.

6.3 Enhancing the Story

This chapter deals with the game-elements and how they integrate with the story. Before I come to my concept, I will take a brief look at what others have to say about multiuser games.

A few of **Schmidt's** points on interactive audience participation in digital cinemas can be helpful here:

[376] Keays 1999
[377] MacNeil 2004
[378] Sleepytom: :::FreeFrame Open Realtime Video Effects::: (Website)
[379] Schmidt 2005:328-329

> "■ not everyone has to be interactive at the same time but everyone has to have the feeling to be part of the event
>
> ■ the specific interaction should provoke comments, reactions and the desire to influence the situation in the non-interacting parts of the audience
>
> ■ the motivation for this type of indirect interaction has to be regarded as important as motivation for interactivity on the screen or in the narration
>
> ■ direct interaction pushes the action forward, indirect interaction makes the situation an event
>
> ■ best interaction is when direct and indirect interaction become indistinguishable: everyone joins the action, no matter if he's tracked or not
>
> ■ simplicity is crucial – on the screen, in the device design and in the game play – so that as many people as possible can identify quickly with the situation
>
> ■ indirect participation needs motivation of accessing the situation intuitively, otherwise a great part of the audience will stay out of the game and the interactive part will feel observed and isolated
>
> ■ indirect participation can become direct participation, so that there is a motivation for taking part on each level of interaction
>
> ■ indirect participation can be used to prepare oneself for direct interaction
>
> ■ participation can be controversial as well as a unifying group experience for either direct or indirect interactions"[380]

Since my aim is to track everyone in the installation - or, if due to technical limitations this is sometimes not possible, at least provide the sense that everyone is being tracked - the relationship between indirect and direct participation is not so important in this case. **Maynes-Aminzade**, **Pausch** and **Seitz** provide a list of points for the design of those games:

[380] Schmidt 2005:332-333

- System Design
    - Focus on the activity, not the technology.
    - You do not need to sense every audience member.
    - Make the control mechanism obvious.
- Game Design
    - Vary the pacing of the activity.
    - Ramp up the difficulty of the activity.
- Social Factors:
    - Play to the emotional sensibilities of the crowd.
    - Facilitate cooperation between audience members.[381]

The following will look further into these points to explain their role in my concept.

System Design: The first point is already partly given through the "invisible" tracking with a camera. Knowledge of the technology should not be necessary since the participants are interacting with the system by normally moving through a room. In regards to the second point, I noted already that the system tries to track everyone but will also not show it if this might not work all the time. The control mechanism is made obvious by the projections on the floor and there will be an intro where the participants are supposed to start the story with a first controlled action. Therefore, they have to be aware of how they control the system.

Game Design: The pace of the activity is varied by two factors. One is the changes in activity from the story to the game-elements. The other one is that the pace of the game-elements increases during participation. Simultaneously, the difficulty of the game-elements increases.

Social Factors: The first point refers to a point which is also repeatedly mentioned by **Schmidt**: The social factors between the direct and indirect participants. The authors consider social involvement as more important than technological involvement. The first and the second point go hand in hand since in my concept the participants have to work together in all activities.

Apart for the use of the multiuser interface already discussed above, other factors need to be considered regarding the game design. One of the conclusions from chapter 4 is that story and game-elements should be related through the world. Two aspects are important for this connection. The first is that the graphical and acoustical world stays the same. The gameplay is happening inside the world of the story. The other connection is that the game-elements pick up elements from the story. This does not necessarily mean that the story is influenced by the game. One important issue here is how to handle failure in the game since a "game over" would make it really hard to return to the story in a meaningful way. One way is to make the games easy. The other would be to design the game-elements without definite failures. Since this concept is meant to experiment with this new idea of integrating story and game-

[381] Topics from Maynes-Aminzade 2002.

elements, I will use several game-elements which deal with this problem differently. Another way of designing the game-elements could have been to create game-elements as rounds or levels which occur several times inside the story. However, this would make it more complicated to relate the gameplay to the current state of the story.

Therefore, I will create easy to solve and different game-elements inside the story with different solutions to the problem of loosing the game. Figure 6 presents how to integrate the game-elements inside the structure of the story.

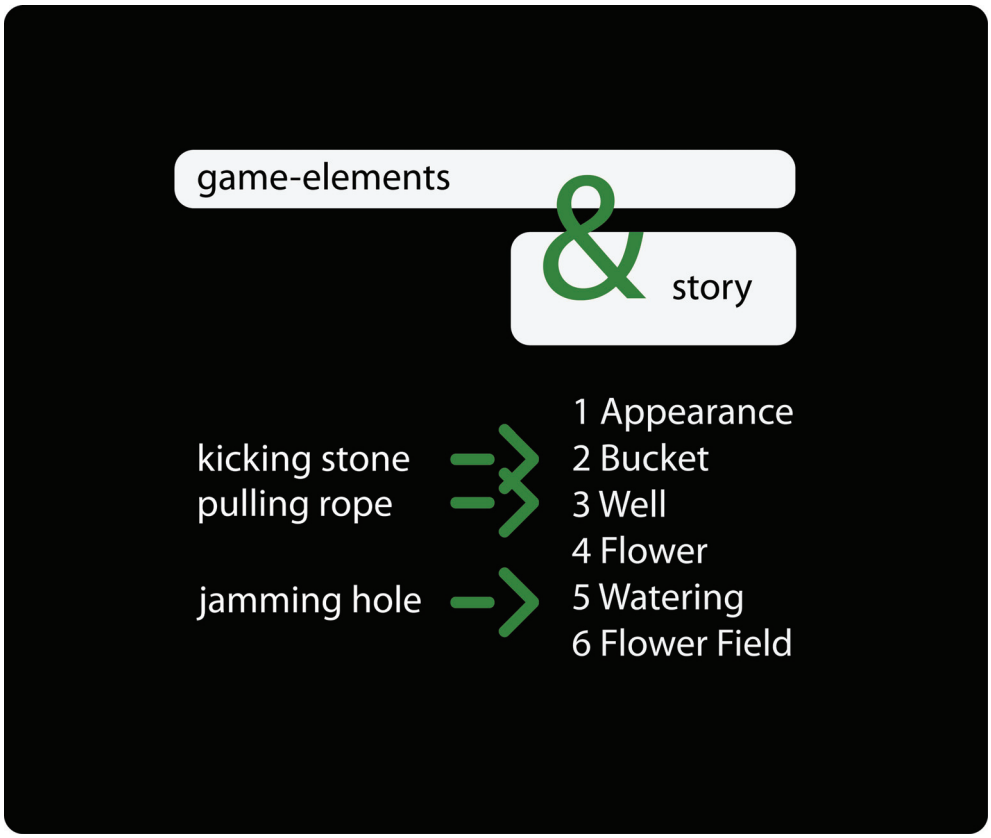

Figure 6: Game-Elements and Story I

Before I explain the game-elements I will describe the way tracking is used as a game-controller. As already stated, the aim is for the participants to work together at playing the game-elements. This will happen automatically as they do not gain control through their individual positions, but through the calculated centre of the positions of every participant. This calculated centre is displayed on the ground together with connections to the participants to show them the connection between them and the centre. These connections and the visual appearance of the centre only show up during game-elements. Therefore, the participants know exactly when it is time to play. This concept can be seen in this abstract representation of the installation.

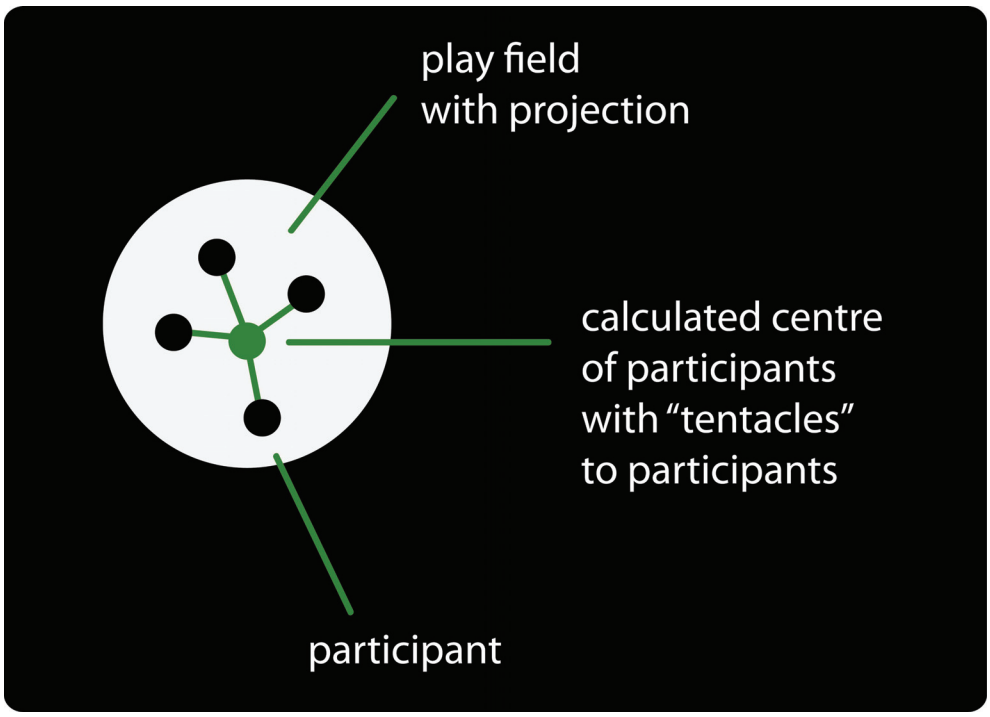

Figure 7: Play Field

To start the story, the participants have to move the calculated centre to a certain position. This ensures that the basic concept of the interface is understood by the participants from the start. The three game elements will be detailed below:

kicking stone: After the character in the story fell down out of exhaustion, the game-element starts. A stone lies on one side of the play field. In the display above this stone it is visible that the stone is already shaking because of the light wind and if it fell over, the bucket leaning against the stone would fall too. On the other side of the circle the character lies with closed eyes facing the bucket on the other side. The goal is to roll over the stone so that the bucket falls down and makes a noise. This is made clear by a red signal around the stone on the projection. The participants now have to move the calculated centre to the stone. They have to do this three times, the stone shaking more at each attempt, rolling over at the last one which ends the game element. To accomplish this game-element, the participants have to move to the side of the play field to move the calculated centre to the right direction. This is an easy task which forces the participants to coordinate their efforts.

pulling rope: After the character has let the bucket down the well, she is too weak to pull it up herself. The participants have to help her. The game-element starts and the "tentacles" and the calculated centre are displayed. On one display, the character is shown pulling heavily on the rope. In the display, the end of the rope points towards the play field and is also displayed on the play field. The participants have to pull the rope by putting the centre over the

rope near the well and move the centre away from the well. Then they have to move the centre away from the rope and again towards the well to pull the rope again. The participants have to move the rope a certain way and after that the character can carry on alone. The happiness of the character at the sight of the moving rope is an additional motivation for the players. This task should be a little bit more complicated than the one in the game-element before because the centre has to be moved in a controlled way in two dimensions to pull the rope and go back along the rope. An alternative would be that the participants do not have to move the rope a certain way but they have to reach a certain speed when moving the rope.

jamming hole: After the character finds the dead flower, she tries to bring water to it but since the bucket has a hole, she is not able to do it. The participants have to help her. In this game-element, the participants are inside the bucket. On the screens are the inner sides of the bucket and on the floor there is the bottom of the bucket with the hole. The participants have to move the centre over the hole to jam it. This can be made more difficult by moving the bucket since the character is running with it. Therefore, this task can be adjusted to several difficulty levels. Another aspect which is different from the other game-elements is the option of failure. In case the participants are not able to jam the hole, the character will run again and therefore they can try again.[382] Here, several options could be used to adjust the difficulty of this game-element. For example, the difficulty could be regulated by measuring how fast the participants resolved the first two game-elements. Another example would be to lower the difficulty if the participants are not able to jam the hole.

There are additional ways to interact, not in game-elements but during the story. This happens in a less influential way since the story stays linear. Mainly the view can be alternated. With this additional way to participate, continuity is given since the participants' activities are not abruptly stopped and started. This will also be used at the beginning of the story. The character is frightened and is displayed only on one display at a time. When a participant comes closer to this display, the character is scared and moves away to another display.

[382] The pulling rope game-element is not played again every time the character is pulling the rope since the character is strong enough to pull the bucket herself out of the well after she drunk some water from the first bucket.

6.4 Installation Setup

This chapter will give an overview of the concept and a short insight into how the concept could be technically realised.

Figure 8 summarises the different types of influences the participants have in correspondence to the linear story.

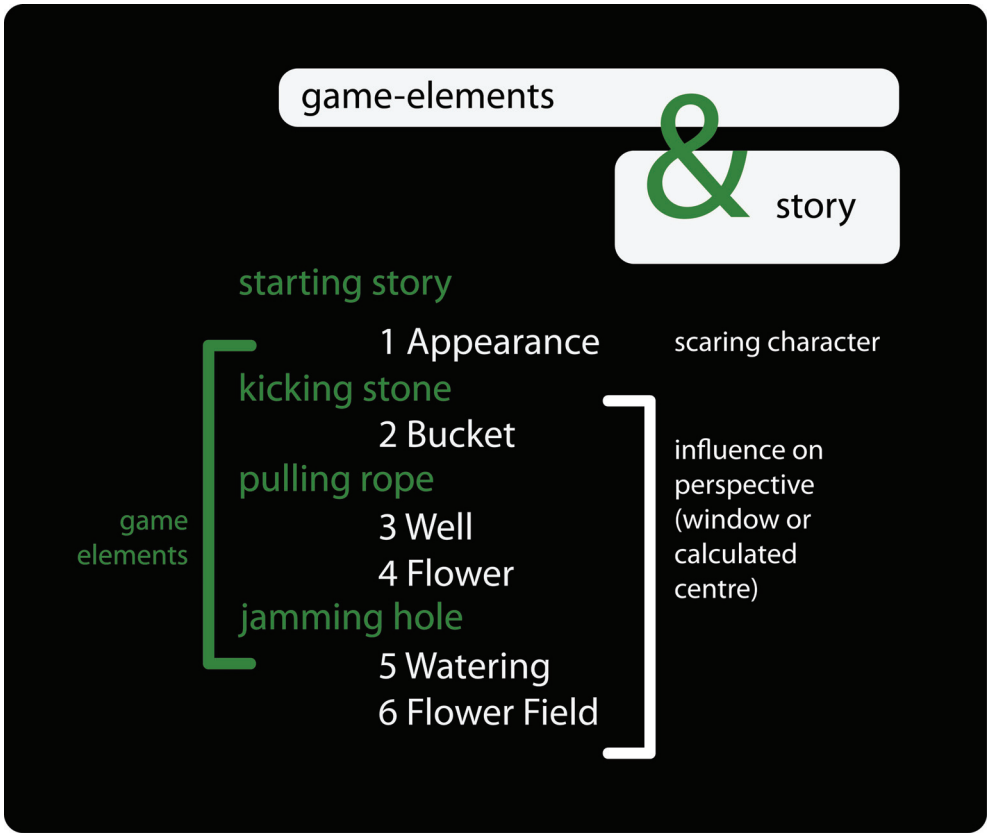

Figure 8: Game-Elements and Story II

Figure 9 presents a view from the top on a very abstract schema of the set-up of the installation. There are displays surrounding the play field on which the story is being told and the play field with the projection for the game-elements.

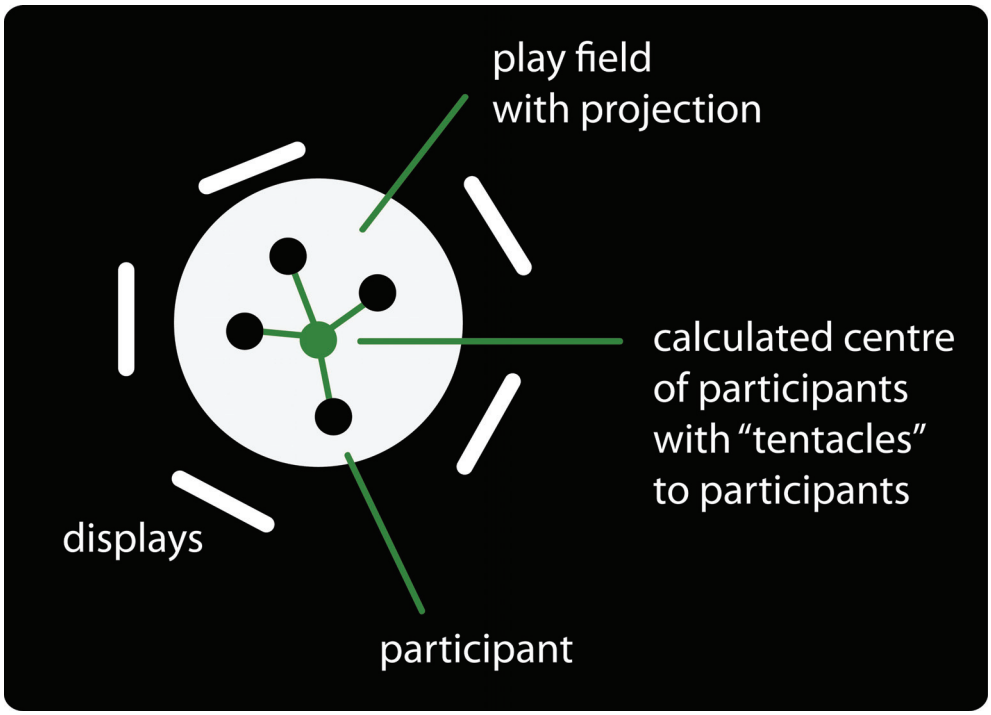

Figure 9: Installation Top View

Figure 10 introduces a technical overview. Every display has a computer which renders the graphics. As there is no panorama with seamless contacts, they do not have to be perfectly synced. Therefore, separate renderings are a good way to display the graphic. Another computer is running **VVVV** for tracking and projecting.

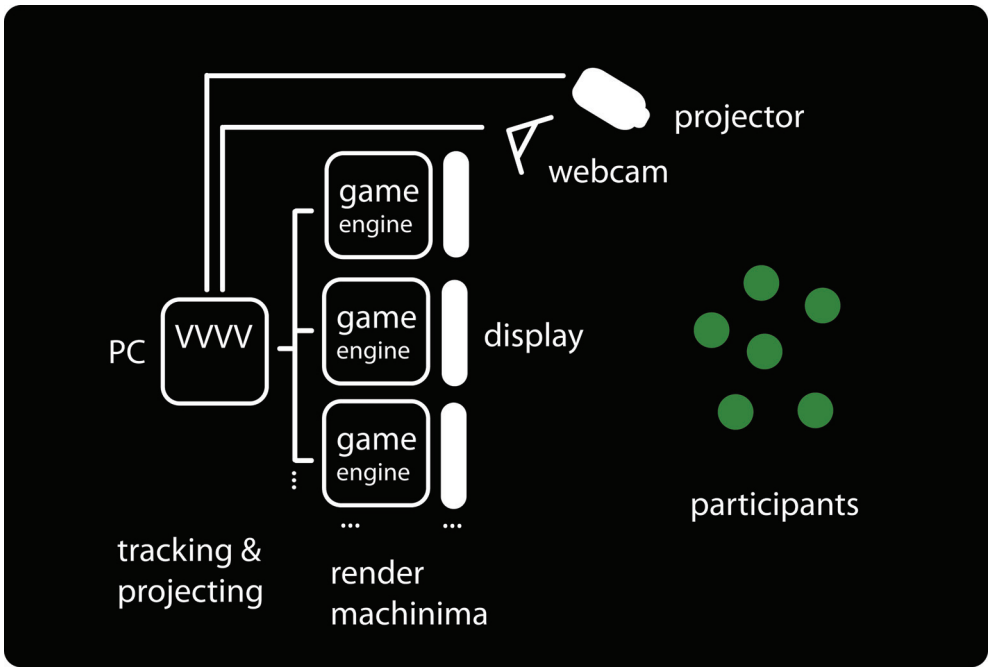

Figure 10: Installation Technical View

VVVV is a **DirectX** based graphical programming language in which the tracking of the participant can be done and the graphics for the projection on the floor can be rendered. It can be programmed to sends signals over a LAN to the computers with the game engines. As already stated in chapter 5, I want to use **Unreal Tournament 3** (UT3) as the game engine. Its script language enables the scripting for a method to communicate with **VVVV** over TCP. **VVVV** sends results from the actions of the participants to UT3. The UT3 computers therefore react adequately by, for example, starting the next story element or changing the perspective. The whole gameplay is mostly done with **VVVV** and only reactions like the falling bucket or the happy reactions of the character are displayed on the screens.

6.5 Questions

As I have now presented a concrete example of a concept out of the idea of combining story and game-elements with machinima, I do not want this concept to be taken as the ultimate example for such a combination. There are many ways to use this idea. Therefore I will raise several questions about how to design the game-elements which could serve as a starting point for further concepts.

Is there a way to use the relationship between distance and immersion in entertainment to produce great works? If so, how would this be accomplished? How could the alternation between story and game-elements be used? Is there truly a way aside from the Aristotelian dramatic arc? How can game-elements be integrated in a good way? Does the story have to be more episodic between these game-elements? Or should the game-elements orientate stronger on the position of the dramatic arc of the story? Should the game-elements remain basically the same and present different levels or rounds? Or should the type of the game-elements change? How strong should the relationship between story and game-elements be? How can such a relationship be created, through world, through content, through characters …? Does the interaction with other people increase immersion or distance? What influences does the interaction with other people during the story or during the gameplay have? Is it a problem that normal repeatability of the game-elements is not given? What if someone wants to play again but does not wish to see/read/hear the story again? How does the perception of time influence the work since the game if perceived as an experience in the presence and the story as events of the past? Should there be the possibility to loose a game? What happens when a game is lost? Which term could be used to describe this idea of enhancing a story with game-elements?

7 Digital Theatre

Puppets have a history that dates back to 30.000-21.000 B.C.E.[383] Not only puppets but also puppet plays are common in every culture. One idea for the use of the interactive potential of machinima is to use it for puppet plays. Virtual puppetry as one of the techniques to produce machinimas is very close to puppet plays. Machinima culture could benefit from the old history and the practical experience of puppet players for the production of machinimas, especially for live performances and shows. Of interest are many things, for example how puppeteers use abstraction not only regarding the look of the puppets but also regarding movement and emotions. At the same time, puppet players could profit from machinima by using the technique of virtual puppetry in their plays. This latter thought will be investigated further in the following.

Virtual puppeteering has not been invented by machinima. Earlier attempts do exist. A very early and prominent one is **Mike the talking head** which was presented at the **SIGGRAPH** in 1988 by **deGraf** and **Wahrman**[384], who showed a 3D head which could be manipulated live with various controls. A more recent work is the **digital marionette** by **Stefan Müller** presented at **SIGGRAPH** in 2007.[385]

There is, of course, also the huge field of motion capturing for 3D computer graphics. Usually, this technique is used in film but it is also used live, for example by the choreographer **Merce Cunningham**.[386] Since motion capturing is normally used to project human movements onto a 3D character and not to control a puppet in a more abstract way, it is not relevant for this thesis to investigate this further.

A very obscure example of virtual puppeteering is the one in which the artist **Stelarc** has set himself up as a puppet controlled by electric impulses which were manipulated by visitors over the internet.[387]

There have also been some attempts to use other interfaces especially in the field of machinima. For example, **Friedrich Kirschner** uses the **Ga-**

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[383] Blumenthal 2005
[384] Robertson 1988
[385] Huff 2007
[386] Evert 2001:112
[387] Evert 2001:117-118 and Stelarc 2001:706-717

metrak controller for his projects[388] and there is a project called **TUI3D** at the **synlab** which is a part of the **Georgia Institute of Technology**.[389]

I propose to take the concept from chapter 5 and work on this with puppeteers. The concrete realisation is supposed to evolve out of the different backgrounds of the members of such a project towards the best solutions for puppeteers, creators and viewers of a digital puppet play. To give a glimpse on what such a project could look like, I will list some ideas with which I would start in such cooperation.

Stage: The stage is minimally equipped with a large projection and a puppeteer in front or on the side of the screen. The puppeteer is clothed in neutral colours, e.g. black, and is clearly visible to the audience at all times.

Puppeteering: The puppeteer controls the virtual character with a device that looks like a normal puppet device[390], with strings attached to it but at the bottom there is a combination of several **Gametraks**. These **Gametraks** transfer the movement of the device to a PC.

Camera: The animation on the screen could use cinematic language. Cuts and camera movement could be connected to certain movements of the puppeteer. For example: The puppeteer lets the character walk forward and when she reaches a certain distance, another shot is triggered. Another option would be to give the puppeteer an additional controller like a button on the floor which he can hit with one of his feet. With this he can trigger the next shot in a sequence of predetermined shots. The camera could also be steered live by an additional person. This person could be an additional puppeteer on the stage or a technician in the back.

Objects: The bucket could be controlled by an additional puppeteer or triggered by the movements of the virtual character. There could be similar solutions for the changing states of the flower and the field of flowers.

Technique: The steering device has to be connected to certain parts of the virtual character. This could lead to a behaviour which is similar to that of marionettes and would be clearly distinguishable from character behaviours in computer games. A problem would be the movement of the character away from a certain position since the steering device does not move. Possible solutions are: When the character leans forward, the puppet moves forward. There could also be a scenario where the steering device is situated on a moveable device (e.g. a board with wheels) which reacts to the steering of the puppeteer. If the puppeteer moved his steering device forward the virtual character and the moveable device would react correspondingly by moving in the right direction.

As already mentioned, these are only ideas and the main thought is to cooperate with puppeteers and benefit from their experience. This is why the

[388] Kirschner, Friedrich: Moviesandbox - a machinima tool for the Unreal Engine (Website)

[389] Georgia Institute of Technology: Synlab: Projects (Website)

[390] A puppet device normally consists of a combination of wooden pieces formed like a cross and hold by one hand.

ideas above cannot be seen as definite solutions. Also, the technical modifications of the game engine would be huge and the development would require much time and skill from the project members. One last benefit I want to mention is that the animation of the puppet could be stored and reused in the interactive installation.

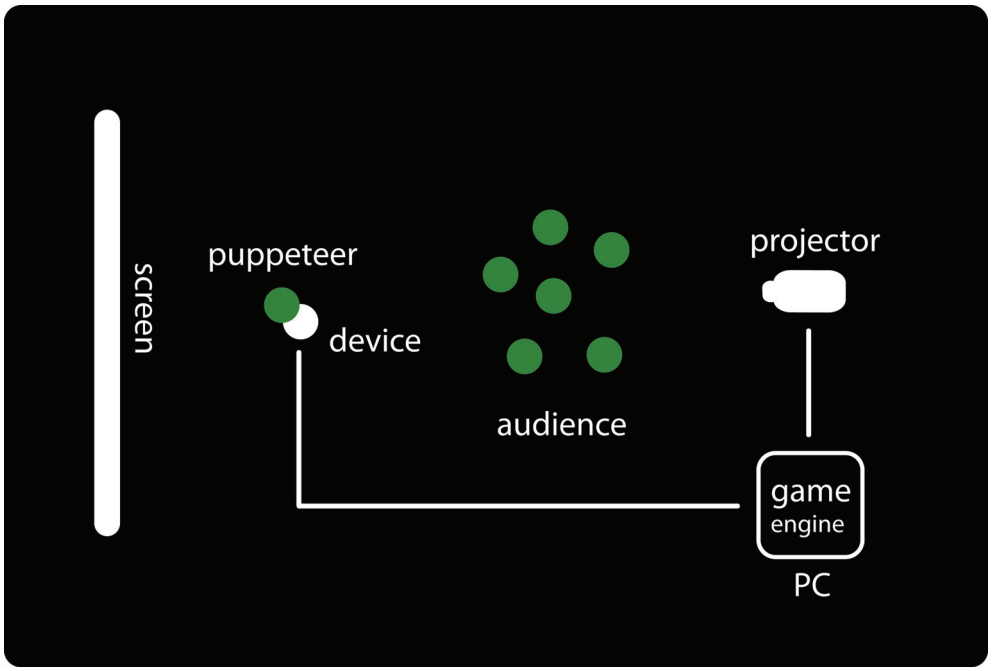

Figure 11: A Simple Puppet Play Setup

8 Live Cinema

There are a number of terms which are often used correspondingly: live cinema, expanded cinema, live visuals, live video jockeying or vjing. In practice, the terms live cinema and expanded cinema are commonly used for an approach that incorporates audio and visual elements in a real-time performances also known as AV (Audio-visual) performances whereas terms like vjing and live visuals are used for real-time visual performances that support music.

There is not only a number of terms, but also several different ways to trace the origins of live cinema. Some authors point to the emergence of the DJ (disc jockey) culture with house music and drugs like LSD (Lysergic acid diethylamide) in which visuals replaced the void created by the lack of a live band.[391] Others refer to the idea of expanded cinema.[392] Yet another group refers back to synaesthesia and very early examples of the combination of visuals and sound. **Makela** even refers back to shadow theatre.[393] A more recent example is the work of **Oskar Fischinger**.[394] In addition, there are close relations to music videos in regarding their history and aesthetics. One important difference is that live cinema is a live performance, which usually does not tell a story in the way some music videos do. However, as this is not necessarily the case, I will present an idea of how to use the concept of chapter 5 for a visual performance.

Even if the story is not as important as in the puppet play or in the installation, the story would provide a background for the visual performance and the mood. Therefore, I chose the term live cinema for this chapter as this approach should incorporate the music in the concept. The music would need to be selected carefully and the visual performance would therefore not be a typical club-situation in which the VJ improvises visuals to the music hour after hour, although this would be possible to achieve with machinima.

The main issue for the idea of a live performance with machinima is what is predefined and what can be manipulated live. A complete control over the whole 3D environment with camera, animations, colours and other ele-

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[391] Crevits 2006
[392] Youngblood 1970
[393] Makela 2006 :9
[394] Dreixler 2005

ments would be too much. The VJ has to be able to use the elements which he has to manipulate in a live situation. The VJ has to adjust to a musical change very quickly, and therefore the interface has to be simple, easy and fast to use. The setups VJs use are very different. A lot of software and hardware exists.[395] I will base this idea on using a small MIDI-keyboard[396] as an interface. Devices such as this are very common as is the MIDI-protocol.

The MIDI-keyboard consists of keys and potentiometers. I will therefore describe ways to use these control elements and map them to the visual elements. One way of handling all these different elements is to automate some of them by connecting them to musical parameters. For example, the rhythm of cutting and the animations could be connected to the BPM (Beats per minute) of the music track. For this, a key can be used to tap the beat at the beginning of the song or when musical changes appear.

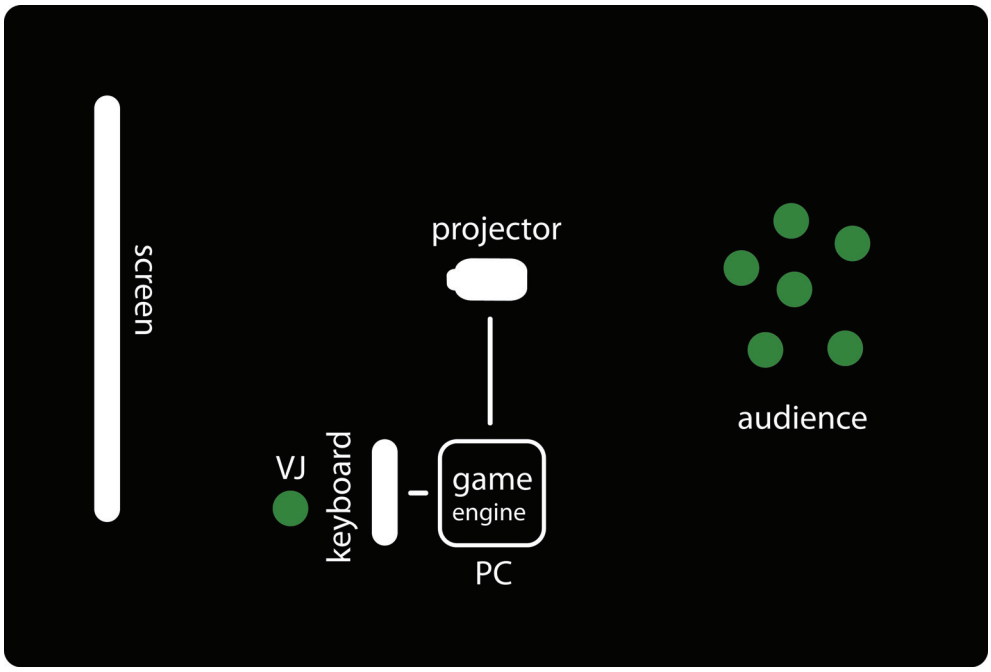

Figure 12: A Simple Live Cinema Setup

The story could be divided into different parts. Each part can be accessed by a key. During a certain part the VJ has the opportunity to manipulate some elements like the camera position through potentiometers. Or he can trigger certain actions with keys such as the pulling on the rope by the character. Therefore, the VJ has the chance to present the story to the audience in the way it was written but can also jump to different sections and manually trigger certain actions. Music usually consists of recurring patterns which could be

[395] For a glimpse at the spectrum of different setups take a look at the chapter "VJ resources" in Faulkner 2006:164-181.

[396] MIDI = Musical Instrument Digital Interface

used to correspond with certain parts of the story. For instance, one musical part could be related to the character walking through the empty world.

In addition to these basic ideas, there could be a performance where a VJ cooperates with a puppeteer. The VJ would control which part of the story is presented, the camerawork and editing, and the puppeteer would manipulate the character with a device as described in chapter 7. Interchangeably, the technique of manipulating camera and editing by a VJ could also be used in the puppet play described in chapter 7.

9 Conclusion

This last chapter will summarise the most important positions of this thesis. At the beginning, it was made clear that machinima is not only a technique but also has to be seen as a culture strongly connected to computer games. One, if not the strongest, feature of machinima is the real-time aspect which leads to an interactive potential I have used for my ideas.

Games and stories are different concepts. The main argument for this position is that they are distinguishable through their temporal relations. They handle events in a different way, stories recounting them and games providing a framework to create them. Therefore, one conclusion is that games are more about process and stories are more about data. This is the basis for important differences between games and stories, for example regarding repeatability, participation and authorship. With this perspective some media forms are not what they sometimes seem to be. Interactive drama is not an interactive story but a simulation; as well as some computer games are simulations and not games.

When thinking about combining stories and games, I start by contradicting the presumption that cut-scenes are bad game design. There are reasons to believe that they have purposes, they set the mood, evoke emotions that spill over into the gameplay and provide information. This leads to the assumption that game-elements can also enhance a story, just as cut-scenes enhance computer games. We can assume that flow or immersion in activity is more relevant for the game-elements and suspense created by the tension between passive perception and empathy and identification is more relevant for stories. Because stories and games are different concepts and because of the different ways they are perceived, they have to be clearly separated.

To use the benefits of machinima, I created a multipurpose concept which is the basis for one concept and two ideas. The concept is an interactive installation where game-elements are combined with a story. Several participants have to cooperate to solve these game-elements. This concept has very interesting ways to deal with the different concepts of story and game and it would be interesting to see it realised.

The two ideas are a good indicator for the fast development in this area. During the writing process of this thesis, **Friedrich Kirschner**, whose puppet play and live show I mentioned, stopped working with game engines

and is now developing his own software for virtual puppeteering.[397] In the meantime, **Daniel van Gils** released software which enables the use of the engine of **Quake 4** as a VJ-software.[398] This software is therefore related to the idea to use machinima for live cinema, as described earlier.

Although using game engines for animated film is a niche and using the interactive potential of machinima for puppet plays or live cinema is therefore a niche within the niche, the current development is interesting. The idea of using technology for different purposes, combining different elements and using gadgets and techniques in a different way is widening the spectrum of technology and creative works. The future will bring interesting new examples of the use of real-time technology. I am especially exited about the new combinations of stories and games to come. Where machinima combined story and game regarding the production, as a technology it has also great potential to combine stories and games for participants, who will then be both player and viewer at once.

[397] Kirschner, Friedrich: Moviesandbox - a machinima tool for the Unreal Engine (Website)

[398] Gils, Daniel van: NuPlay - (Website)

10 Appendix

The German long version of the story **Dead Flower**:

Tote Blume

Eine große, weite, graue Ebene erstreckt sich und verschwimmt am Horizont mit dem ebenso tristen Himmel. Weit und breit ist nichts zu sehen, außer einer kleinen Gestalt. Ein Wesen in der Einsamkeit dieser Weite schaut sich, ihrer Verlorenheit bewusst, hilflos und ängstlich um.

Es ist eine Frau, ihre dünnen hilflos wirkenden Arme scheinen verkrampft, ihr Körper scheint seltsam verdreht und gekrümmt, der Kopf geneigt und strähnig hängt langes schwarzes Harr über Gesicht und nach vorne gezogenen Schultern. Doch trotz dieser Schüchternheit, Verängstigung, Verkrampftheit und dem einfachen schwarzen Kleid aus grobem Stoff ist unter dieser Maske eine wunderbare und einmalige Schönheit zu entdecken.

Langsam bewegen sich ihre Pupillen von rechts nach links. Erst nach einigem zögern bewegt sie langsam ihren Kopf. Weitere Haarsträhnen fallen ihr ins Gesicht, doch verharren ihre verkrampften Arme weiterhin in ihrer Position.

Zögerlich wagt sie einen kleinen Schritt. Sie schiebt einen Fuß vor den anderen. Leicht verschränkt setzt sie die Schritte hintereinander und so bewegt sie sich unbeholfen in einem kleinen Kreis, um einmal in jede Richtung gesehen zu haben. Doch nichts - da ist nichts. Nirgendwo.

eiter und immer weiter tragen die kleinen Schritte die Gestalt durch die triste Welt. Ihre Beine schreiten bald weiter aus, ohne dass sich ihre Verkrampfung durch die Bewegung lösen würde.

Sie marschiert lange und bald merkt man ihr Anstrengung an, bald Ermüdung und bald schleppt sie sich auf wackligen Beinen mit hängenden Schultern nur noch langsam voran. Die Augenlieder werden schwer, und blinzeln noch einige Male langsam. Bevor sie sich schließen rinnt eine Träne einsam die Wange hinunter. Ihre Arme die fast schon den Boden erreichen stützen sich letztendlich auf diesen auf. Die Knie berühren den Boden und langsam legt

sich die erschöpfte Frau auf die Seite. Ihr Kopf schlägt unsanft auf den Boden und sie öffnet noch einmal unter dem Schmerz die Augen. Da verändert sich etwas in ihrem Gesichtsausdruck. Unglaube über etwas, das sie erblickt: einen Eimer.

Sie richtet sich von neuem auf. Der Gegenstand liegt verloren in dieser grauen Welt. Ein schwarzer Eimer, welcher aus groben Holzstücken gefertigt ist. Die Frau hebt den Eimer hoch. Sie untersucht ihn gewissenhaft, klopft dagegen, beäugt ihn von allen Seiten, schaut schließlich hinein und guckt durch ein kleines Loch im Boden durch den Eimer hindurch und …

… erspäht einen Brunnen durch das kreisrunde Loch. Sie nimmt den Eimer runter und diesmal wischt sie sich mit einer beiläufigen Bewegung die Haare aus dem Gesicht. Sie blickt zurück zu ihrem Fund und wieder hoch. Schließlich setzt sie sich, noch mal den Eimer in ihrer Hand ansehend, Richtung Brunnen in Bewegung.

Der Brunnen ist aus dunkelgrauem Stein errichtet. Ein Seil hängt über dessen Rand. Die Frau guckt in den Brunnen, betastet vorsichtig die Mauer, um sich schließlich daran festzuhalten und noch weiter vornüber zu lehnen. Eine zeitlang kann man die groben Steine mit dem Blick nach unten verfolgen, doch mit zunehmender Tiefe reicht das fahler werdende Licht nicht mehr aus und wandelt sich zu einer pechschwarzen Dunkelheit.

Die Frau zurrt einen starken Knoten fest, welcher den Henkel des Eimers mit dem Seil vertaut. Ihre schlanken Hände agieren dabei zielsicher und lassen eine Stärke erahnen, welche ihr aufgrund ihrer schmächtigen Anmutung kaum zuzutrauen war.

Der Eimer wird hinabgelassen. Immer weiter und weiter sinkt er in das Tief des Brunnes ein und verschwindet schließlich in der Dunkelheit. Das Seil, welches neben dem Brunnen liegt wird immer knapper und mehrmals sieht sich die Frau ängstlich den kleiner werdenden Rest an und lässt dabei den Eimer immer langsamer hinunter. Doch schließlich scheint er auf Widerstand gestoßen zu sein und ein Geräusch von Wasser kann erahnt werden, wie es sich in langen Echobahnen den Brunnenschacht hinaufwindet. Neugierig und freudig dreht die Frau ihren Kopf hin zum Ursprung des Geräusches und beugt sich schließlich gefährlich weit über die Steinmauer.

Mit einem Mal schreckt sie hoch und zieht voller Energie und Einsatz den Eimer hinauf. Der Eimer schlenkert während seinem Aufstieg gegen und an der Steinwand entlang den Brunnen hoch. Kaum erreicht der Eimer den Brunnenrand ist das Wasser auch schon fast durch das Loch wieder hinausgelaufen. Schnell versucht die Frau das Loch zu verstopfen. Erst durch einen Finger, doch er ist zu klein. Dann mit der ganzen Hand, jedoch ist diese zu

knöchern. Schließlich zieht sie einen Zipfel ihres Kleides hoch und stopft ihn in das Loch. Kurzfristig scheint dies den Fluss des Wassers zu stoppen, doch bald fängt der Stoff an zu tropfen. Schwarz und dick rinnen die Tropfen von dem Stoff und bilden schon bald einen Wasserlache auf der grauen Ebene. Mit Erschrecken stellt die Gestalt fest, dass die schwarze Farbe durch das Wasser aus dem Stoff gewaschen wird. Schnell zieht sie den Zipfel wieder hinaus und schaut traurig zu, wie der letzte Tropfen Wasser über das grobe Holz des Eimers rinnt und schließlich zu Boden fällt.

Enttäuscht verlässt die Frau den Brunnen. Geknickt marschiert sie wieder weiter, das Seil sorglos in der Hand haltend und daran befestigt den Eimer hinter sich herschleifend. Schließlich guckt sie hinauf in den Himmel, ihre Sicht fängt an zu verschwimmen, da ihr vom Licht Tränen in die Augen steigen. Als sie den Kopf wieder sängt erblickt sie unter sich eine kleine Blume. Ihre Träne fällt hinab und tropft auf ein welkes Blatt, welches durch ein Grau hindurch noch das Rot seiner einstigen Pracht scheinen lässt. Die Frau bückt sich langsam zur Blume hinunter und dort wo die Träne nun ihren Weg auf dem Blatt fortsetzt entsteht ein schmaler Streifen, welcher gegenüber dem Rest des Blattes an Farbe hinzugewinnen zu scheint. Schließlich erreicht der Tropfen den Rand und fällt zu Boden. Fasziniert blickt die Frau auf die Blume.

Nach einiger Zeit des sorgsamen Untersuchens der Blume springt die Frau auf und läuft den Weg zurück, den sie gekommen ist. Sie wirft den Eimer über den Rand des Brunnens. Kaum ist ein platschende Geräusch zu hören zieht sie eifrig an dem Seil. Als der Eimer den Rand erreicht schnappt sie sich ihn sogleich und eilt damit zurück zur Blume. Dabei schwappt das Wasser über und rinnt durch das Loch im Eimer. Eine Spur von Wasser zieht die Frau bei ihrem Lauf hinter sich her und als sie ankommt sind gerade noch ein paar Tropfen Wasser übrig, welche sie behutsam über die welken Blätter der Blume gießt.

Gespannt sitzt die Frau nun da und beobachtet was passiert. Nach einiger Verzögerung zeigt sich eine schnell voranschreitende Veränderung. Die Blume lebt sichtlich auf, bekommt mehr Farbe und die Blätter richten sich gen Himmel. Von der Wirkung begeistert springt die Frau auf und kommt nach einem weiteren Lauf wieder mit einem kleinen Rest Wasser zurück, wartet wieder die Reaktion ab, um nach dieser sogleich wieder loszulaufen. So gehen diese Wasserläufe hin und her und die Blume wächst und blüht immer weiter auf. Schließlich entspringt aus ihr eine wunderschöne, rot strahlende Blütenpracht. Staunend bewundert die Frau nun die Blume. Beide stehen inmitten der trostlosen grauen Ebene in neuem Glanz, denn das Wasser hat die schwarze Farbe aus dem Kleid der Frau gewaschen und es erstrahlt in einem prächtigen Weiß. Der Ausdruck von Glück und Zufriedenheit erwächst in ihrem Gesicht und auch ihrer Bewegungen werden weicher.

Als sie dieses Mal langsam zum Brunnen zurück geht, fast schlendernd, fällt ihr auf, dass auf dem breiten Streifen von Wasser, den sie bei ihren Läufen hinterlassen hat, kleine neue Blume aus der Erde sprießen. Begeistert springt die Frau abermals hoch und fängt an diesem neuen Blumenmeer Wasser zu geben. Sie läuft und läuft und strahlt immer mehr auf. Schließlich lässt sie sich nach einigen zierlichen Luftsprüngen der Freude inmitten einer roten Blumenwiese fallen und legt sich entspannt darin nieder.

Der Brunnen und die Blumenwiese um den Brunnen und die Frau inmitten der Blumenwiese, alles erstrahlt in einer schönen Pracht. Doch weiter abseits, nun vergessen von der Frau, hat die erste Blume wieder angefangen zu welken. Ihre Blätter hängen traurig hinab und mit der Pracht der anderen Blumen wirkt sie nun noch elender als zuvor. Und hinter der ersten toten Blume erstreckt eine große, weite, graue Ebene, welche am Horizont mit dem ebenso tristen Himmel verschwimmt.

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