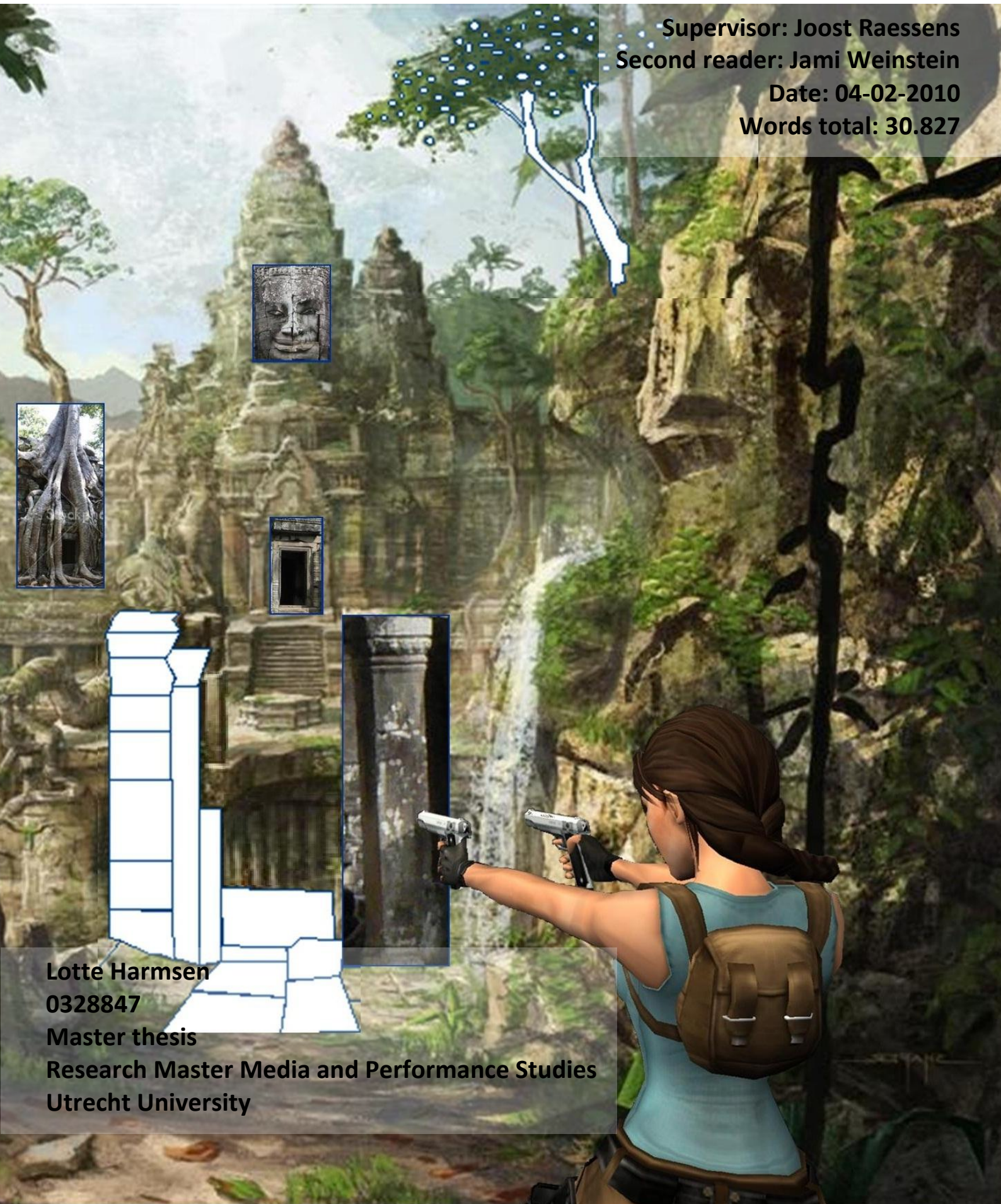


# Virtual space in computer games

Supervisor: Joost Raessens  
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Date: 04-02-2010  
Words total: 30.827



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*If it's not real*

*You can't hold it in your hands*

*You can't feel it with your heart*

*And I won't believe it*

*But if it's true*

*You can see it with your eyes*

*Even in the dark*

*And that's where I want to be*

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From the song "Brick by Boring Brick" by Paramore

## Acknowledgements

First of all, I would like to thank my supervisor Joost Raessens for his comments and feedback during the writing process which helped to improve the structure and logic of my argumentation. I would also like to thank my second reader Jami Weinstein for expressing faith in my project and accepting my request to grade this thesis. Gratitude also goes out for her gender studies courses during which I was introduced to the work of Gilles Deleuze.

Concerning the contents, I would like to thank fellow student Geert Bruinsma for the great time in Copenhagen while we were both studying one semester at the IT University. Our vivid theoretical discussions during our study abroad and back in the Netherlands were invaluable for the inspiration and development of my ideas.

I would like to thank one of my teachers in Copenhagen, Gordon Calleja, in particular for his courses on virtuality and reality in games and his doctoral thesis on immersion which helped develop my understanding of the perspectives within game studies on these subjects.

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Fellow students that I also wish to thank are Karin van Es, because she introduced me to non-representational theory, as well as Lina Zigelyte and Melinda Jacobs. All of them were willing to read (parts of) my thesis and provided useful feedback.

This thesis could not have been written without the unconditional moral support from my friends and family. Thank you for listening to my reflections on the hard work and insecurities and for expressing never-ending trust in my abilities to produce this final product. In this light, I especially want to thank my friend Margot for spending numerous mornings swimming with me as diversion, my parents for listening to my reports of stagnation and progress, and my boyfriend Arjan for his patience and faith in me.

## Abstract

The term *virtual* is frequently used by game scholars to describe the space presented in computer games. This space is usually typified as unreal and contrasted with unmediated real space. The conception of virtual as fake originates in the popularity of virtual reality technology in the 1980s. There are roughly three descriptions of the virtual in the meaning of unreal: The virtual is seen as an unreal reflection of the real world, as an imitation of it that however much perfected is never the real itself, and as having very real effects.

The dichotomy between virtual and real can be traced in game literature in the conception that game space is a representation of real space. The idea that games could thus be analysed as texts prevailed at the outset of the study of games as an academic subject. However, this perspective was soon criticised by scholars who opted to study games foremost as interactive media. This focus on the interactive element of games led to a growing amount of work on the importance of the body during play and, more recently, to a focus on the role of the player as a performer who actively creates space. Studying game space from these approaches, the opposition of real versus unreal virtual space is no longer of use.

Constructing an alternative terminology of the virtual drawing inspiration from the work of Deleuze, leads to an understanding of games as processes of virtualisation and actualisation that involve affect. This enables an explanation of the reality of game space, accounts for the convergence between player, machine and game and respects the specific characteristics of games. I recommend the use of the new terminology of the virtual that I formulated, to enable a true break from the perspective of games as representations and maps for the approaches of interactivity and embodiment, and to provide a firm ground for the approach of performativity to study the creation of spatial realities in respect to the specificity of the medium.

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## Introduction

A snow-capped mountain range stretches over the town's northern border and tapers down to a southward-facing, concave bay embracing a small archipelago of glittering islands. Homes are clustered in predictable locations: on the islands, against the seaside, and close to the mountains. This is the community of Blazing Falls, a town with over 25,000 inhabitants (Lastowka & Hunter 1).

A beautiful holiday location. Yet, inhabitants and visitors cannot enjoy this landscape in every way they want. Building sand castles on the beach, and then going for a refreshing dip in the sea, or going up to the mountains for some off-piste skiing is not something you will see people do. Likewise, you cannot take a cruise to visit Blazing Falls yourself. “After all, none of this is real. Blazing Falls, as you probably guessed, is a *virtual* world.” (Emphasis added, Lastowka & Hunter 2).

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Figure 1: Screenshot of Blazing Falls from THE SIMS ONLINE.



Figure 2: Screenshot from THE SIMS 3 which illustrates a possible swimming location for Blazing Falls visitors: not in the sea but in the restricted area of the pool.

The statement that “none of this is real” makes me wonder whether virtual space really does not exist. Like in this example which describes one area in the game THE SIMS ONLINE, the term *virtual*

is frequently used in game literature to describe the space that is presented in games. This space is usually typified as being *unreal* or *fake* and is often identified to exist in *non-physical* form in *digital media*.<sup>1</sup> The five adjectives (unreal, fake, non-physical, digital, mediated) are used interchangeably and in combination with or as substitution for the term *virtual*. With these attributes, virtual space is contrasted with real space that we encounter in our everyday lives which is physical, non-digital and unmediated. This real space around can be perceived by us through our senses of sight and touch and we can move through it to experience its spatiality by changing perspectives. Virtual space is seen as an imitation of this real space which mimics the sensorial experience and opportunity for movement that real space offers. This imitation is never fully accomplished as not all the senses will be addressed and movement will be limited by the interface of the digital medium. Therefore this space is said to be virtual which dismisses it as a fake version of the real.

Computer games are one of the several media that present virtual space. By writing *computer games* I refer to digital games that are played on a digital machine, which could be a computer but also a console or a handheld device.<sup>2</sup> The games present space in the form of text or image on the screen (like a description such as above or a visual version of it – see Figure 1 and 2), in the form of sound through the speakers (of the character's footsteps and of singing birds further away), or through motion feedback through the controllers (which start to shake when bumping into a wall) or combinations of these possibilities.

Computer games can therefore be differentiated from analogue games such as chess or soccer that take place on a board or court in the real space and do not need to make use of

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<sup>1</sup> I will demonstrate the use of the word virtual in the meaning of unreal, fake, non-physical, digital and mediated in chapter one.

<sup>2</sup> This variety of machines suggests that games can also be seen as *content* that is played *through* several media. Nevertheless, I want to keep to the definition of games as media because I concentrate on the qualification of space as unreal which is based on the fact that they are played through digital media. The digital nature of computer games therefore determines the characterisation of presented space which can be compared to the similar characterisation of space as unreal in other media such as film, television, etc.

digital information to present a spatial world. If the rules of these games are digitised in programmed code and their space is represented by a machine, then the games are no longer analogue games but computer games, in which a transposition from real space to virtual space is made.<sup>3</sup> When I speak of computer games in this thesis I refer to these mediated forms of chess and soccer which are played on digital play courts, as well as games in which space seems limited such as TETRIS, DONKEY KONG and ELITE BEAT AGENTS because they also present space through a combination of image, sound or motion feedback. Even games that are totally text-based such as ZORK, in which no space is to be seen, heard or felt, present space. It is created in the imagination of the player through the textual descriptions on the screen (Wolf 14) and the text itself can be said to take up space on the screen (Ryan "Cyberspace", no pagination).

Most examples throughout the paper will come from strategy games, first-person shooters and 'massively multiplayer online role-playing games' (MMORPGs); games in which space plays an important part in the game play because it needs to be traversed, explored or conquered. Nevertheless, I do not wish to exclude games in which space plays a smaller role because I believe that all computer games involve some sort of virtual space and it is this type of space that I wish to study for its qualities and differences to real space. I do however exclude pervasive games that are played in a hybrid of digital and real space from my analysis. I want to demonstrate that computer game space is not unreal and can do this more forcefully by concentrating on digital games than on games that already have a clear element of real space in them because they are played simultaneously in real and digital space.

The differentiation between real space around us and unreal, mediated virtual space that I indicated is also used by computer game scholars. However, game studies has been shaped by a debate between researchers who perceived games as texts that could be interpreted and

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<sup>3</sup> To define digital games more precisely, most game scholars value the inclusion of the following elements: rules, variable and quantifiable outcome, valorisation of outcome, player effort, player attached to outcome and negotiable consequences (Juul "Half-Real", 36).



those who saw games as interactive media that required bodily actions to be played. The latter vision fuelled the move towards research on the interactivity of the medium and the role of the body during play. The study of interactivity and embodiment led to a recent interest in the study of performativity in which the player is in fact seen to actively create new spatial realities. These three latest approaches contrast the opinion that games offer a fake imitation of real space, because players physically react to the game by taking actions that change space. However, even in these approaches that focus on the real aspects of games, statements on the unreal virtual are common.

For the research in my thesis, I take as point of departure the observation that this clash between computer game scholars results in one group of researchers whose approaches challenge the idea that game space is unreal while still using this distinction. Since the opposition of virtual against real is no longer proficient for these researchers, I pose the following research question: *How can an alternative terminology of the virtual be developed that can account for the description of space that comes forward in the approaches game scholars have taken towards researching games as interactive, embodying and performative media?*

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This research question can be disentangled in four sub-questions that will be answered in separate chapters. In the first chapter I aim to answer why the virtual is used in the meaning of unreal. This addresses the first concept that stands central in this thesis, the *virtual*, and reveals the fundamentals for my claim that the virtual is defined as unreal. I start out by analysing the origins of this use in the popularity of virtual reality technology. Then, I discuss how these characteristics of the virtual come forward in scholar's writings about games to specify further how game space is characterised as unreal.

In chapter two, I will answer to what extent the opposition between virtual and real is useful in the different approaches to space within game studies. This chapter displays a focus on the second central concept of this thesis: *space*. I present an argumentation for my premise that

the new approaches to game space cannot stand by the notion of the virtual as unreal as they do. In this light, I look at the different approaches to games as representational texts, game space as maps, games as interactive media that require an embodied player and game play as a performative practice.

In order to answer what requirements an alternative understanding of the virtual should meet, I will portray an alternative interpretation of the virtual by French philosopher Gilles Deleuze in chapter three. He describes the virtual as potential because it contains an endless number of possibilities. Discussing the background and advantages of this theory, I want to provide arguments for why the most recent approaches to game space need a fundamentally different conception of the virtual.

In chapter four, I will use the knowledge of my inquiry into the notion of the virtual by Deleuze to answer how a new terminology of the virtual can be constructed. It should provide a useful theoretical base to research game space from approaches that focus on the interactivity, embodiment and performativity of games.

## Chapter 1: The virtual versus the real

This chapter focuses on the first central concept of this thesis: the *virtual*. The question I aim to answer in this chapter is: why is the virtual used in the meaning of unreal? With an exploration of the concept *virtual*, I aim to provide a solid basis for my presupposition that the virtual is used by academics in general and game scholars in particular as carrying the meaning of unreal. This claim foregoes my research question and since it has such extensive importance for my research, it deserves a more profound argumentation than the one I presented in the introduction.

*Virtual* is the new buzz word to promote products and describe their endless and hitherto out of reach or even unimaginable possibilities. As a prefix, *virtual* gives a special touch to the word following it. Consider the combinations “virtual classroom”, “virtual tourism” and “virtual sex” (see Calleja 47; Ryan “Narrative”, 25). A logical thought is that these conjugations have to do with encounters that take place over a wide distance by using digital media (Ryan “Narrative”; 12, 25). Furthermore, they also carry the connotation that the events are not quite real: you did not really see a real elephant during your virtual wild-life tour of South-Africa, and no real bodies touched in a virtual chat box. In short, *virtual* is used to describe things that are not real and non-physical. They can even negatively be called ‘fake’ because your experience of the wild-life or contact in the chat box is of lesser worth than real experiences. However, the term is positively used to describe new possibilities with digital and mediated devices. *Virtual* is also often used in opposition with *real* when in a sentence one thing is described as virtual because it is different from the other thing that is real.

As well as marketers and by now the general public, media academics use the term virtual to write about their objects of study. In academic research within game studies, scholars struggle with the meaning of the status of in-game events and objects by trying to describe them as being virtual or real. In a somewhat humorous account of *THE SIMS*, game scholar Gonzalo

Frasca shows how you can get in trouble caring for virtual subjects that are close to real life. As a fan of games that simulate daily life rather than fantasy tales, he writes about reactions to the game *BABYZ*: “I remember a couple that was really concerned about the lack of handicapped virtual babyz. Others were a bit concerned about the amount of time that people ‘wasted’ playing with virtual babies while real orphans were starving for affect.” (Frasca “The Sims”, no pagination). Furthermore, he writes about the consequences for himself, when he realised that “it was quite ironic that I spent many days cleaning my virtual house up, while my own apartment was not in, to put it in a nice way, great shape.”, making him into feeling “like an underpaid virtual house maid.” This leads him to conclude that although virtual and real are in contrast with each other, simulations can become quite real themselves. In the same way, people playing a ‘massively multiplayer online role-playing game’ (MMORPG) often feel that this is just like another day job (Frasca “The Sims”, no pagination; Castronova “Synthetic Worlds”, 177).

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Another aspect of games in which the real and the virtual blend into each other is the case of game economics. Game scholar Espen Aarseth suggests that he can say that “money in my virtual pocket is as real as the virtual money in my real bank account outside the game”, showing how not only in-game money is virtual, but how our real-world money can also be described by that term (“Doors and Perception”, no pagination).<sup>4</sup> Economist Edward Castronova made a whole study of the value of money from MMORPGs’ economies, concluding that money from these virtual economies can be traded for real money, thus even for ‘as real as they get’ hard coins (Castronova “Synthetic Worlds”, 148).

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<sup>4</sup> In fact, money has always been virtual as its worth is a symbolic replacement of trade objects that were used to “buy” things in the earlier moneyless barter economy. However, virtual money in our banks and virtual game currency are not entirely similar. The first can directly be traded for international currency, goods and services, while game money first needs to be traded for real money before it has the respected value that makes it directly exchangeable. Virtual game currency thus has value in a rather limited range of situations.

It should be clear that however real these effects, the academics in the example are using virtual in the meaning of unreal. By contrasting the unreal character with the real effects that the virtual can produce, they emphasise the unreal nature, because they draw attention to their surprise to find this contradiction. Georgia Leigh McGregor is doing the same in her article on game space. In particular, she writes about pervasive games (digital games played in a real-world environment) in which the “game space is mediated [...] [and] framed within the screen by the virtual camera. The artificial world is contained and bordered, isolated from real space.” (McGregor 2). In the specific example of pervasive gaming, it is quite hard to maintain the solid division between the real and the virtual because the two need to be integrated to form the game. Players need to interact with digital material while locating themselves to actual places in a city or building. When McGregor writes that in a pervasive game of HUMAN PACMAN “[p]layers see both the real environment and virtual cookies, collected by physically entering the space that appears to contain the object.” (idem) The space that they enter must have both virtual and real qualities to enable physical entering and the holding of the virtual item. Although realising that virtual and real space have come together in this situation, McGregor still describes them as standing in contradiction. The virtual space that appears to hold a virtual item is set off against the real space that is physical. Physicality describes a reality that the virtual space does not have because it only ‘appears’ to contain something. It is thus a fake appearance that tricks us in believing it really exists.

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These few examples of the use of the word virtual are not enough to base any conclusion on, but they do point in the direction of the use of virtual as fake, non-physical, digital and mediated which stands in contrast with the real as physical and non-mediated. Virtual experiences in virtual space can be looked down on and called fake since they do not involve any physical or real consequences. It does seem however, that the virtual is not insignificant because it can have some very real effects, something that makes the virtual rather special (see Heim

108). I illustrated how Frasca mentions the lively discussions caused by a game and Castronova defends the value of game objects outside a game. Often, virtual seems to refer to a connection with new media. Be it in the remarks of game scholars or when used as a prefix to promote a new product, the word virtual is mostly found in proximity of digital media.

For a better understanding of why the term virtual is used in these particular ways, I will take a deeper look into the exact meaning and use of the term than I have done in this introduction. This inquiry involves an analysis of the origin of the application of virtual to describe unreal and mediated subjects, to define different qualities of the virtual. I will then attempt to identify these qualities in the writings of game scholars on space, to give a more detailed account of with which meanings and origins the term virtual is used in game studies.

### **1.1 Origins of the term virtual**

To go deeper into the meaning and the use of the term virtual, I will now proceed with an overview of the origin of its meanings of fake and non-physical and with an implication of a connection to media technology. I will use the findings to establish different aspects that the virtual has, which I will use to see how they are expressed in game studies.

The associations of the virtual as unreal and technological were formed in the second half of the twentieth century with the popularity of virtual reality technology (VR-technology) (Calleja 47). The word virtual, however, was not invented to be used for VR-technology and I will therefore start with a short historic account of its use before this technology was developed. The word virtual existed long before, but lost its original technical and philosophical roots at the beginning of the 18<sup>th</sup> century (Calleja 47) when it was used in the field of optics, in which the physical behaviour and properties of lights were studied. It was then used to describe the refracted image of an object (Woolley 60). Mirror reflections began to take on the meaning of



fake, although this was a fake that could still function as something or as good as real (Ryan “Narrative”, 27).

The ideal to be able to create something that is close to being real is very old. The phenomenon of imitation and images of the real is already described by Aristotle in his *Poetics* (3.1, 6). VR in its strive towards the “fullest artistic experience” of reality comes very close to Plato’s cave allegory (Ryan “Narrative”, 20). Western art history shows a development in immersive ideals, in which the effort towards depiction of reality knows ups and downs. The discovery of perspective painting in the Renaissance and the use of *trompe-l’oeil* in Baroque painting are examples of techniques that were used to achieve an effect as close to reality as possible (2-3).

Although the popularity of VR-technology reached its highest point in the 1980s, already after the Second World War there were scientists working on state of the art technology that would enable humans to interact with machines. These developments were fuelled by theories on human-machine interaction in the area of *cybernetics* which was established by Norbert Wiener around 1948. Among the machines that were invented in the 1960s were panoramic murals and experience theatre in the form of the Sensorama, a device invented by Morton Heilig that projected film while addressing all the senses (Rheingold 50). Later, the switch from mechanical to digital was made to create flight simulators, and VR-devices as *head mounted displays* and data gloves (Ryan “Narrative”, 48).

Developer and visual artist Jaron Lanier is said to have been the one who coined the term *virtual reality* in 1986 (Calleja 38). He was the founder of a company that developed and built goggles and gloves for VR-machines. In a conversation with fellow researcher Scott Fisher, who wrote about virtual environments, Lanier came up with the term *virtual reality* for the first time (Carlson, no pagination). Other stories show that the term was in use as early as the 1960s when computer scientist Ivan Sutherland published his article “A head-mounted three dimensional

display” (Woolley 40-41).<sup>5</sup> The term virtual reached the greater public in the early seventies through advertisements of computer company IMD when they launched their product “virtual memory”. The idea of a memory that was a “simulation of a physical system” that functioned identically to real memory (except maybe a bit slower) was not new, but the name was (Woolley 60).

VR became known by the greater public in the 1980s when it was popularised by Lanier in an interview given to *Whole Earth Review* in 1988 (reprinted in Zhai 1999) and by Howard Rheingold in his book *Virtual Reality* in 1991 in which they both explained the fantastic role and opportunities of VR (see Ryan “Narrative”, 48). In his book, Rheingold follows the view of information technology pioneer Theodor Nelson (1980) who sees the virtual and the real as two different things that stand in contrast with each other (Rheingold 177).

Virtual reality is thus a somewhat unusual combination of words that describes something that cannot be realised because the two words contradict each other: the term is an oxymoron. The apparent impossibility of the combination is the reason why VR-technology was embraced by cyberpunk novelists such as William Gibson in the 1980s. The astounding world views they described were also realities that were so complex that they could not be real or could not be imagined to be real in the near future which is exactly what the novels prophesied would be the case. They envisioned how machines were hooked up to humans to give them the sensation of being in another reality. Gibson expressed a fairly ironic take on virtual reality as a powerful yet unreal, hallucinated “nonspace of the mind”, but this critical view remained unnoticed by cyberspace technologists and theorists who started to use this exaggerated vision of virtuality (Aarseth “Allegories of Space”, 153).

From this short historic account of the rise of VR-technology, it can be concluded that the virtual can be seen as a reflection of the real (as in the field of optics), as an almost perfected

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<sup>5</sup> This article by Ivan Sutherland was published in 1968, but there was also mention of virtual reality techniques in his earlier paper “The Ultimate Display” from 1965 (Woolley 40-41).

real that is just unreachable (as in the quest of VR-technology and cyberpunk literature), or as something that is fake but nevertheless has real effects (as accomplished through the goggles and gloves of VR-systems).

Continuing now to analyse the perspectives of the virtual more specifically amongst computer game theorists, I hope to find how the previously identified ideas resonate. I will not focus on the term *virtual reality* specifically, because I suspect that it surfaces in the form of other terms and descriptions as well that would otherwise be lost. For example, virtual reality can also be described as artificial reality or virtual environments (Ryan "Narrative", 258). I am not researching VR as such but only using it to identify the use of the much broader term virtual in game theory. I will pay attention to the possibility that the term will surface as such or as substituted by one of its descriptive adjectives (unreal, fake, non-physical, digital, mediated) or a combination of them. Also, I will look out for specific game terms that are connected to the virtual.

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## **1.2 Perspectives on the virtual in game studies**

The previous analysis of the history of the term virtual in VR-technology demonstrates that the virtual is used to describe things that are:

- reflections of the real world;
- unreal but have real effects;
- almost real but yet unreachable.

To see in what way these aspects are taken up by game scholars, I will now do an in-depth analysis of several concepts within game studies to see how they match with the above identified perspectives on the virtual. There are a lot of overlaps between the perspectives, which is why the discussion of one perspective of the virtual will always show arguments from the others. This makes clear that the characteristics of the virtual are interrelated so that

together they describe what the virtual is. I will pay special attention to specific terms within game studies that correspond with the perspectives on the virtual. These terms, which appear underlined in the following text, will be further explained at the end of this chapter in the subchapter “Unpacking concepts related to the virtual”. They deserve special attention for their relation to the virtual and for their specific meaning within game studies.

### *1.2.1 Reflections of the real*

Something that is repeatedly stressed in game studies literature is the fact that games are simulations of the real. Game space then, is a representation of real space. Three different layers of game content can be distinguished. The first two indicate that game space can be seen as unreal. The first layer is the *real* which can be identified as “that which, when you stop believing in it, doesn’t go away” (Aarseth “Doors and Perception”, no pagination). The real is to be contrasted to the second layer of game content, the fictional, which are elements in games that are like films and novels. They are unreal, imaginary and fabricated by a writer or designer and made of signs. They do not necessarily have to represent something in reality. Game elements can for example be dragons or enchanted doors which have no counterpart in reality. The adjective *fictional* hints at the representational character of the virtual, because it equals space in games is to a reflective image of the real.

Space can be seen as the main theme of games (Aarseth “Allegories of Space” 154). It is also the element that sets them apart from other cultural genres and that shows most innovation in the genre of games itself (161). There are many different types of games and space plays a different role in each of them. Sometimes being the setting for the game or the challenge itself, other times the setting is more important itself or even devoid of a player-character (such

as in strategy games) (159).<sup>6</sup> The reason that space in games is defined as unreal is that it is only a representation of naturalistic space, which is built on an underlying grid of nodes and connections (161).

Since game space is generated, there are only limited 'regions in space' that rely on the conceptually bigger notion of real three-dimensional space (Aarseth "Allegories of Space", 162). Space is also seen to be produced, but by means of a social process of 'spatial practice'. Two different kinds of space are constructed in this way: representations of space (the formal, rule-based system) and representational spaces (which consist of symbolic imagery that represent space) (163). These two sides of the coin make games playable: "they pretend to portray space in ever more realistic ways, but rely on their deviation from reality in order to make the illusion playable." (169). Unrealistic game elements that deviate from real world social rules and physical laws contribute to the logic and strategic parts of the game. Features as teleporting and interactive maps that break down the illusion of realism (146-165), offer an augmented usability and a great deal of fun to the games. This shows that games cannot be real because that would make them unplayable but that they nevertheless carry an element of realness.

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This element of realness can be located in the third layer of game content, which explains how games are different from literature or film by their unique element of interaction. The third layer is the *virtual* or *simulated*; two terms that can be used interchangeably. These objects can look the same as the fictional doors and dragons at first sight, but they are different because they can be acted upon. This means that they are made up of both referential signs (like their fictional siblings) and on a dynamic model of game code which reacts when you try to interact with these objects. These player actions and their effects (slaying the dragon, opening the door) are real, which is why the virtual (simulated) category can be placed in the position

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<sup>6</sup> Georgia McGregor, who analysed landscapes as game elements, calls game spaces in which the player fights enemies over the environment 'contested spaces'. Spaces in which the player fights against the environment by overcoming obstacles are called 'challenge spaces' (3-5).

between the real and the fictional. They are real in conceptual sense but virtual in physical sense (Aarseth "Doors and Perception", no pagination), because they only consist of computer graphics and sound. This position in between the real and the fictional that simulated game elements have, show that the virtual can have real effects because something happens when the player interacts with them. The real effects of the virtual belong to the perspective I will continue with now.

### *1.2.2 Real effects of the unreal*

When combining the play element and the fictional element of games, it seems that the contradiction between the real and virtual becomes harder to maintain. Games can be said to be partly real because of their effects in reality. Apart from dividing their content into three layers, games can also be seen to consist of two connected elements: the rules, which are real, and the fictional world, which is only projected by the game and "do[es] not actually exist" ("Half-Real" 121). A game can be described as only a system of rules, but its fiction cannot exist on its own without the rules because it is dependent on them. The shape of the fictional world helps understand the rules; the fact that Mario (DONKEY KONG) has three lives and that you are unable to drive endlessly without outer boundaries are explicable through the rules of the game (130, 176).

The player is able to accept the abstract fictional world presented in games because games are seen to be make-believe and therefore do not necessarily present a coherent world (Juul "Half-Real", 122-123). Games are namely not perfect imitations of the real and this leads to the necessity to fill in missing details. Various kinds of games present the real world in different, more or less detailed ways. Nevertheless, all types of games depend on a relation to the real world through representation in order to be interpretable as something meaningful by the player (131-133). Sometimes, the representation of the real world is incoherent because "the



game contradicts itself or prevents the player from imagining a complete fictional world” (123).

The lack of information here is as such that it is impossible for the player to construct a logical whole. Personally, I find that a construction of a meaningful whole is always possible, even when game rules are very illogical in the case of Mario having three lives, because players have access to a wider context of the world which includes fantasy stories and other games, in which the possession of multiple lives is common.

The unreal, fictional aspect of games is connected with real effects in the way that the stylised and simplified simulations with varying degrees of fidelity are connected to concepts and metaphors from the real world. By equating the pressing of a combination of buttons to the serve of a tennis ball, a credible connection to the context of the outside world is established (Juul “Half-Real”, 170-173). Through the controller, the player is thus able to mimic real-life actions. This works because players agree to believe in the fiction in order to play the game, but there is also a dual structure at work that connects the real rules and the unreal fiction together. 21

Following a theory about possible worlds from Romanian literary theorist Thomas Pavel (1986), we can state that through partly-real games “something in the real world (primary universe) is assigned a place in a fictional world (secondary universe).” (Juul “Half-Real”, 141). Actions that we perform in the real world, such as pressing a key combination, takes on another meaning in the game world, namely serving a tennis ball. This makes the action both real and fictional at the same time. The simultaneous pressing of buttons and the representation of a served tennis ball can be so convincing that it seems as if the virtual almost reaches a real status, which is an aspect of the virtual I will discuss shortly.

In line with this duality of actions, there needs to be a connection between the goal in the game and the situation of the player in the real world as well. The winning situation of the game must give a positive emotion for the player to be successful and problems arise when winning the game does not match with the player’s goals (161). The emotions felt following

successful or unsuccessful moves in the game indicate that unreal games can indeed have real effects. Another real effect of games manifests itself from these real-life effects. Because of the intertwined rules and fiction, there is also an overlap between real and unreal in statements that can be made about the game. Depending on the point of view on games taken, one can tell facts about the game's fiction (e.g. about qualities of an in-game character) and about the activities a player undertakes while playing (controlling a character, winning the game) (167-168). It is thus possible for a player to say that she won a game or was very good in defending herself against trolls. By doing so, the player will gain more respect and appraisal from other players which can certainly be qualified as real effects.

### *1.2.3 Almost reachable real*

Real effects of games can also be demonstrated by looking at their economies. Economies of 'massively multiplayer online role-playing games' (MMORPGs) are often so extensive that they can almost be called real. These game systems are in fact so close to the real that they can be analysed as if they are real-world economies and their real world value can be determined.<sup>7</sup>

Virtual objects in the game economy can even become real outside the game because trade is possible between virtual and real economies. The overflow between virtual worlds and the real world is displayed in figures of lawsuits from people who have lost virtual items due to server insecurities or hacks which led to real arrests and court cases, and the selling of virtual items for real money (Castronova "Synthetic Worlds", 2). Virtual swords can take on a real value because their power and scarcity is understood by players outside the game (148). There is influence the other way around from the real to virtual worlds too, if only because money and time issues can influence the ability of a user to spend time playing (7). The possibility of overflow from one

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<sup>7</sup> See for instance Edward Castronova's book *Synthetic Worlds: the Business and Culture of Online Games* (2005), and also his paper "Virtual Worlds: A First Hand Account of Market and Society on the Cyberian Front" (2001).

world to the other can be defended only by adjusting the often used notion of a closed off game space (the magic circle).

A quality of virtual worlds which makes them almost real but not quite is that the virtual is “physically different from the Earth” (Castronova “Synthetic Worlds”, 29). As a player you are yourself present in the game world, but only through your avatar. You are one step removed from the MMORPG world and from your in-game character through mediation (6-7). The game world is made by programmers and therefore not real. Created computer spaces are “like real cities and fairy-tale cities at the same time” (1). So although they have a lot in common with real cities (e.g. social issues, economic systems), they are not quite real (only ‘like’ them) so they share a lot of features with unreal fairy-tales. The fact that games are man-made or synthetic because they are programmed distinguishes them from real worlds (27).

The engagement with the in-game events will nevertheless give the player the feeling that the synthetic world is real for the moment of playing. This phenomenon is called immersion. Lack of details in the programmed computer graphics, for instance, will no longer be noticed when immersed in the game because of the state of concentration that the player is in (Castronova “Synthetic Worlds”, 87). Such a strong sense of immersion in a machine is the situation I identified as the aim of developers of cybernetics with their popular theories, fictions and prototypes in the eighties. It can be said that a shift has taken place from these science-fiction dreams about technological hardware to a focus on the development of software that by now is able to create this realness (Castronova “Synthetic Worlds”, 5).

The outstanding possibilities that synthetic worlds offer, makes game scholar Edward Castronova so enthusiastic about virtual worlds that he sees them as a new frontier to be conquered. He is convinced that virtual game worlds carry a realness in them which makes them

possible places to migrate to, in order to escape from real world difficulties.<sup>8</sup> Large migration flows can be imagined in the future in which a large part of the settlers' political, social and economic life will take place online ("Synthetic Worlds" 8-9). They would only need to come back to Earth to eat and sleep (2). The advantages being that we can get rid of physical constraints such as body shape issues, and enabling magic, visiting far-away relatives and the possibility to experience historic events from the past (26), while providing a rich spectrum of emotional experiences that we lost like the feeling of "communality, the sense of meaning, [and] the personal validation" (272). Writings about a future in which migration to virtual space will be possible express the longing for games to be real. Games will get closer and closer to this ideal because representations of space will become more detailed and effects outside of the game more powerful but from the analyses it shows that games will never totally reach this ideal because of their representational, unreal nature.

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### **1.3 Unpacking concepts related to the virtual**

In the analysis above, it comes to the fore that the game researchers indeed describe computer games as being unreal in the tradition of the opinions on VR-technology from the eighties. They write that games try to simulate the real but never fully succeed in doing so. On the other hand their economic and bodily effects can be quite real. As I expected, game scholars make use of synonyms as 'fictional', 'simulated', 'partly-real' and 'synthetic' to describe the game space as virtual. Additionally, certain concepts recurred that need further explanation. The terms make-believe, magic circle and immersion have a specific meaning within game studies that I will unpack now, showing their relation with the virtual.

The fact that games need active mind-work from the player to interpret the incomplete representation of the real world in the game qualifies games as make-believe. This is related to

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<sup>8</sup> The possibilities and constraints of moving to the virtual world as new promised land is expounded in his book *Exodus to the Virtual World: How Online Fun is Changing Reality* (2007).

the strategy called *suspension of disbelief* that is said to be needed in order to play a game. This last concept was originally created by the poet and aesthetic philosopher Samuel Coleridge and was used to describe the interpretation that was needed to understand works of art (Coleridge 145). Added to the theory can be that “we do not merely ‘suspend’ a critical faculty; we also exercise a creative faculty. We do not suspend disbelief so much as we actively create belief” while playing a game (Murray 110). By applying a ‘suspension of disbelief’ the player tells herself to accept abnormalities (magic, dragons and multiple lives) and to engage with the game as if it were real.

The idea of games as *make-believe* is closely related to the concept of the magic circle. This term is used to indicate the separateness of games from everyday life. Games are said to be fun, consequence free and nonproductive, setting them apart from everyday activities that involve work and liability (Malaby 96). The notion of the magic circle is attributed to cultural anthropologist Johan Huizinga who wrote about the wider notion of play in society as early as 1938.<sup>9</sup> Huizinga claims that games are something outside of everyday life in this quote:

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All play moves and has its being within a playground marked off beforehand either materially or ideally, deliberately or as a matter of course. [...] The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e., forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart. (Huizinga 10).

Here, ‘magic circle’ is only used by Huizinga as an example of a marked off space of play that has its base in Wicca traditions. Nevertheless, the term began to stand for the separate play space

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<sup>9</sup> The English translation of this text dates from 1955.

when it was taken up by game scholars Katie Salen and Eric Zimmerman (96). The closed off nature of the game activity that it presumes is constantly debated, because as I showed game play requires information from outside for interpretation and has effects outside the game world.<sup>10</sup>

In the same way as the *magic circle*, the term immersion is also subject to debate because it presupposes a move from the player into the game world, leaving the real world behind in terms of concentration and bodily feelings (see Murray 98-99). It is therefore objected that players are never fully immersed because players “are also re-embodied and gain a sense of presence and agency in these virtual spaces through the interface and the avatar.” (Dovey & Kennedy 106). Being present in the virtual and in the real simultaneously leads to a state of *telepresence* which is typical of interaction with new media (Manovich 94, 164). Telepresence does not demand a simultaneous presence in different physical areas, but can also be a presence “in multiple conceptual spatial domains” (Taylor, no pagination). The idea that we leave our bodies behind on our side of the screen are said to be part of an *immersion fallacy* (Bayliss 99; Salen & Zimmerman 450-451).

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### **Chapter conclusion**

In this chapter, I have established that the virtual in game studies is seen as unreal, fake, non-physical, digital and mediated and contradicted to an unmediated real. This answers my sub-question for this chapter and grounds my claim that the virtual is defined as unreal by game scholars which forms the departure for my research in this thesis. I showed that the origin of the opposition of virtual and real lies in the popularity of VR-technology which emphasised the virtual as unreal reflections of the real world which can have real effects and can be so perfected that it can be very close to the real. The longing to present an almost-real which was reflected in

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<sup>10</sup> See Castronova “Synthetic Worlds” (2006, 147) and Juul “The Magic Circle and the Puzzle Piece” (2008) for discussions of more open models for games than that of the *magic circle*.



the development of VR is also present in games. Game scholars pay attention to these technical improvements but retain the idea that games are fictional, representational or synthetic while they also argue that they can very well have real effects on the player. Specific terms that are used in game studies that reflect these ideas but are also debated describe games as make-believe, played in a magic circle and immersive.

Now that I have discussed the virtual in games, I would like to move towards a discussion of space in games, the second concept to be studied of the subject virtual space. It involves an analysis of the different existing approaches to game space. I will range the perspectives on the virtual that I presented in this chapter and illustrated with their expressions by game scholars to these approaches to give an impression of their positions. By giving an overview of the theoretical approaches that are used to describe space in games, I want to find out which ones employ the conception of the virtual as unreal and which ones do not comply with this understanding.

## Chapter 2: Game space in theory

I will now turn to a discussion of the concept *space*. I will go into this second part of my object of study by giving a short account of the importance of space in games which I will then ground in an analysis of the theoretical approaches to game space. The question I pose in this chapter is the following: to what extent is the opposition between virtual and real useful in the different approaches? In the introduction, I stated that the newer approaches to game space, which developed in reaction to the approach of games as representational texts, are not compatible with the distinction between virtual and real. This statement forms the foundation of my research question that inquires for an alternative notion of the virtual for these recent approaches and I will therefore firmly ground this plea in this chapter.

The approaches to game space that I will look at come from a number of different theoretical backgrounds because game studies is very interdisciplinary by incorporating ideas from several other disciplines. I will pay attention to the debate within game studies that I mentioned in the introduction. I observe that it shapes the distinction between approaches in which the notion of the unreal virtual can be used and those that cannot profit from this notion. In the previous chapter, I identified a discord in the struggle of game scholars to describe games as unreal representations, but nevertheless as almost real and with real effects. While discussing the different approaches to game space, I will explicate where the scholars who expressed these perspectives on the virtual are located in the debate. This enables me to demonstrate in which approaches the distinction between virtual and real is utilised.

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### 2.1 Space in games

Before diving into the intertwined theories that are used to describe space in games, I will first discuss what space in games is. As I argued in the introduction, all games present space in some

sort although some games are more easily associated to be spacious than others. Games in which a two-dimensional representation of three-dimensional space is shown on the screen, such as in first or third-person shooters (e.g. TOMB RAIDER), are the most obvious to be named as games in which space plays a big role. The space makes up most of the shown image and the space needs to be traversed to progress in the game. Interaction with the game can thus result in visualising other parts of the game space that were off-screen before (Wolf 12). Other games do not show visual space as they are text-based or audio-based, showing a textual description of space on the screen (e.g. ZORK I) or transmitting audio through the speakers (e.g. games for the visual impaired). Simple games may present a two-dimensional space on screen which is either the whole play field (as in PAC-MAN, TETRIS and ELITE BEAT AGENTS) or which can be scrolled sideways or vertically by moving the player character (as in DONKEY KONG) or on both axis by scrolling the view across the field (as in THE SIMS and CIVILIZATION) (Wolf 13-16).

There are more expressions of game space possible (see Günzel “The Space-Image”; Wolf), but without going into them all I would like to conclude by saying that all games make use of space in some sense. As became clear from my analyses of game scholar’s writings in the previous chapter, game space can be seen as part of the fiction that helps explain the game rules (Juil “Half-Real”, 176) and can challenge the player by posing obstacles and difficulties to find the right path (Aarseth “Allegories of Space” 159; McGregor 3-5).

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## **2.2 Development of game studies as interdisciplinary discipline**

After the explanation of the role of space in games, I will now give an overview of the development of game studies as an academic discipline. Doing this enables me to locate the different approaches to game space that I identify in the next sub-chapter. Game studies is a very new, interdisciplinary study which incorporates several strands of academic traditions. Among them are new media, literature, film, theatre, sociology, philosophy and psychology.

Although the first computer games were developed around 1960,<sup>11</sup> games were for a long time only studied by psychologists who investigated if games had negative effects on players (Newman 5). This research is still continued today because games are often used as scapegoats to explain the violence under young people, and it took a long time before researchers started to look at games themselves instead of their effects. The first article of this type dates back to 1996 when Richard Bartle wrote “Hearts, Clubs Diamonds, Spades: Players Who Suit MUDs” and was soon followed by Espen Aarseth’s book *Cybertext: Perspectives of Ergodic Literature* (1997) which is seen as the groundwork for game studies as an academic discipline.<sup>12</sup> An academic discipline is characterised by knowledge and order, which means that it comprises a consolidated, respected collection of theories based on a determined body of knowledge (Moran 2, 13).

By the time Aarseth’s book *Cybertext* came out (1997), game studies could best be described as an academic field; an area of study with conformity on the subject of study but without fixed core theories, which means that it can be studied in a variety of academic departments. Scholars from literature and film studies started to develop an interest in games around this time and approached them with their own theoretical backgrounds. They introduced thinking of games as representations which led to the assumption of games as unreal worlds. A reaction to this research in literary or media departments came when scholars who were more trained in new media began to study games. They regarded games as simulations based on rule systems that were different from other media because they needed the player to interact with them. Therefore, they objected to the study of games as texts and argued for a focus on the dynamics of play and interaction. The discussion between the game researchers became known

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<sup>11</sup> Some people date SPACEWAR! which came out in 1962 as the first ever computer game, others point to TENNIS FOR TWO which dates from 1958.

<sup>12</sup> This book, which was originally his doctoral theses, treats the subject of ergodic text which requires work to be traversed, like for instance hypertext that can be explored by clicking on hyperlinks. In this book, Aarseth also sets up a typology by which to characterise different sorts of ergodic texts, which was later elaborated into a typology of games.

as the narratology/ludology debate with the literary and film scholars pointed out as the narratologists and the scholars that argued for the study of games for their own sake as the ludologists (ludus being the Latin word for game). The latter pointed to the interactivity of games as their medium specificity.

The quarrel made people realise that game studies needed a solid base as a separate discipline instead of placing it within for instance a media or literary department. If this would not be done, “the fundamentally unique aspects of the games could easily be lost” wrote Aarseth in the first edition of the new online journal for game studies in 2001 (“Computer” no pagination). The development of game studies as a discipline would logically entail appointing lecturers, taking on students, setting up research journals (such as *GameStudies.org* in which Espen Aarseth wrote his plea) and starting career paths by initiating PhD positions to enhance the credibility of the field and safeguard its future (Moran 13). After the request for the setting up of a new discipline in 2001, game studies developed and expanded considerably. Today, it is being studied within separate game departments as well as in literature or media departments. The spread-out nature that the discipline retained from its start as a new field can now be accounted for because game studies became a very interdisciplinary discipline. This indicates that the scholars studying games are aware of interfaces with other disciplines with which they stay in dialogue and take inspiration from (Moran 3, 16).

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It is now time for a discussion of the different approaches to game space that originated from these developments in game studies. I will use this overview to aid the identification of the positions that these approaches have in the narratology/ludology debate.

### **2.3 Theoretical approaches to game space**

What follows is an analysis of the five different approaches to space in games that I identify: representation, maps, interaction, embodiment and performativity. In order to enable the

answering of the question central to this chapter, I will pay attention to the extent to which the notion of the virtual as unreal is expressed in these approaches and to whether this notion complies with these approaches.

### *2.3.1 Representation*

As outlined in the introduction to this chapter, games were originally studied within a collection of departments among which literary studies. Literary scholars began to research games to see if they could interpret games as narratives and could find narrative elements in them. This led to interpretations by the so-called narratologists of the computer “as a kind of storytelling genie in the lamp” (Murray 15) and the game environment as a narrative architecture which entails meanings and metaphors, thus making space the storytelling element of a game (Jenkins 121).

Since the meanings that can be given to elements of the game architecture are subjective, one player can have a very different idea about the game space than another.

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Illustrative of the subjective meanings that we give to the things around us, is sociologist Michel de Certeau’s description of a city that enunciates itself to the pedestrian who traverses it. In this process, this person connects metaphors, names and symbols to places in the city that are not fixed but can be debated about (“Marchés” 148-154, 156-159). One player can thus feel that Blazing Falls, the town in *THE SIMS ONLINE* that I depicted in the introduction, is very crowded with its 25 thousand inhabitants while another player will play the game because of its peace and freedom to visit the pleasant places at the beach.

Seeing the playing of games as a meaning giving practice is based on the idea that texts are made up of signs which refer to something in the real world. The study of signs is called semiotics. The idea that the player gives her own meaning to the text comes from the school of cultural studies lead by Stuart Hall who set up a theory of encoding and decoding. His main

argument was that audiences do not uncritically take over the meaning that was put into a text but negotiate their own meaning while decoding the ones that were put into the text (Hall 62).

Examples of how games can be understood as representational texts are the statements by Aarseth that a door in a game that cannot be acted on is a representation (“Doors and Perception” no pagination) and by Juul that games are only partly real because they present fiction (“Half-Real” 121). These were mentioned by me in the discussion of the different perspectives on the virtual as unreal in chapter one. Although these statements fit in with the representational approach, Aarseth and Juul are not narratologists but rather clear examples of ludologists. Their reasons to critique the literary approach to study games was aimed at the fact that games were studied as texts without attention that games had to be played in order to create an analysable text in the first place. Therefore, I will now take a closer look at the workings of semiotics in games to explain how games can be seen as made up of a system of signs that represent the real world while keeping in mind the play element of games.

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Gonzalo Frasca writes about semiotics in games in his master thesis in a way that pays tribute to the medium. He explains that signs in games indeed represent the real world, but instead of merely being still pictures, they are representations that simulate the workings of objects. A simulation should be seen as a special type of representation. The object interacts because it is made up of referential signs and on a dynamic model, as Aarseth points out in his article “Doors and Perception” (2005, no pagination). In this way, a game is a simulation of reality because it is a simplified model of it, with objects, space, time and persons acting almost like they normally would (Frasca “Videogames”, 23-24). Frasca stresses that it is the simulative character of games which expands the room for interpretation of the signs within them, making them different from narrative elements. Since a simulation is dynamic and does not always show itself in the same state to the user, players can adjust their idea about the sign at a revisit of the same space. Different users may even have different ideas of a sign because they see it in

different states (36-39). An example is a door in a game that is first closed, but opened at a second passing after a switch has been flipped.

The theory that meaning is created by humans when interacting with the world is part of the school of constructivism. Stuart Hall is one member of it with his theory of the critical decoding of encoded meanings. Constructivism relies on a philosophy which favours epistemology above ontology, thus focusing on personal experience of the world as the basis of actual knowledge. Someone who is going further than the constructivists who argue that reality is constructed, is Jean Baudrillard. Instead of merely analysing the representations of the real world and their interpretations, he says that there is no longer such a thing as the real world: we lost it. Only representations of the real world, and representations of representations thereof, remain. (Baudrillard, "Simulations", no pagination). This means that there is no longer a real or truth underneath the biased representations that we make of the world, because representations and the real have become the same thing. This scenario is what Baudrillard names the simulacrum.

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Baudrillard's simulacra theory thus demonstrates how the virtual, consisting of representations, is fake. On the other hand, the simulacra theory does not only express the fake quality of the virtual, it also shows how the difference between representations and the real disappeared. By this equation of the real and its representation, the virtual is simultaneously rendered real. Seeing theory and as such Baudrillard's own writing as part of a sign system, also his own words are now real events. This means that by claiming something in a theory, this claim becomes true (Smith 81; Ryan "Narrative", 34). Illustrative is the debate which was stirred up by Baudrillard in which the fact that the Gulf War was really happening was put into doubt after he wrote that "The Gulf War did not take place" (1995).<sup>13</sup>

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<sup>13</sup> Baudrillard wrote this series of articles ("The Gulf War Did Not Take Place") to provoke a discussion about the realness of the Gulf War that was registered by the media and constantly broadcasted. The public at home



A way in which Baudrillard exemplifies his theory is by drawing on a story by Borges of an empire in which:

the Art of Cartography reached such Perfection that the map of one Province alone took up the whole of a City, and the map of the empire, the whole of a Province. In time, those Unconscionable Maps did not satisfy and the Colleges of Cartographers Set up a Map of the Empire which had the size of the Empire itself and coincides with it point by point. (Miranda book IV, chapter 45; cited in Borges 90).<sup>14</sup>

Later generations found that the extensive map's size made it useless, so they abandoned the map in the deserts to decay (idem), "as an aging double ends up being confused with the real thing" (Baudrillard "Simulacra and Simulations", no pagination). This shows how maps are abstractions and representations of the real that can be mistaken or interchanged for the real.

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The representational approach thus complies with the notion of the virtual as unreal. Games are seen to be made up of representational signs which merely present the real and this view is shared by narratologists and ludologists as Aarseth, Juul and Frasca alike. From regarding games as representational texts comes the idea of the relation between game space and maps. To see what role maps play in games, I will now turn to a discussion of theory around game maps to focus on the representational character of the space in games more specifically.

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could only access the war through these images, making the war look very real, but had no other way to verify this truth.

<sup>14</sup> This fable is from 1658, written by Suarez Miranda in *Viajes de Varones Prudentes*. However, it is often misattributed to J.L. Borges, who quoted the story in his book *Dreamtigers*. The mistake was first made by Baudrillard, and then copied by others (Smith 74). Marie-Laure Ryan in turn refers to the congruous anecdote by Lewis Carroll (Carroll 726 in Ryan "Cyberspace", no pagination).

### 2.3.2 Maps

A good way to study the representational character of game space is to regard the playfield as a map and additionally to analyse maps of the playfield that are presented on the screen. This allows a comparison of real space and game space as several equations can be made. Either game space can be compared to real space and their on-screen maps to cartographic maps, or the game space can be interpreted as a map which can be seen as a representation of the real that becomes the real itself.

Sometimes the game space itself is even regarded as a map. The game world of PAC-MAN for instance can be seen as a labyrinth or a map of it, and the landscape in simulation games can be regarded as a map of the depicted environment (Ryan "Cyberspace", no pagination). The latter is true because there is no main character in the game and because the environment is so prominently present. This enables the player to identify with the landscape, which is a more abstract mode of identification than identifying with a game character (Lammes 227). This means that the player does not identify with any real or imagined characters such as soldiers or God. Simulation games are often referred to as god-games, because the player can be seen to be the omniscient god commanding the creatures and the landscape, but this is not what is at stake in this abstract mode of identification. Nor does the player identify herself with the game space itself, but really with the simulation process of the game itself (Friedman, no pagination).

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The space that can be explored in games is often restricted by programmed boundaries. Jumping from level to level (through a menu) is possible, but games with a coherent game space (at least within levels) also exist. Think here of strategy and simulation games with an outstretched playfield. Still, not all games necessarily stay true to the laws of Euclidean geometry even within the separate levels. Because of their impossible spatial lay-out they cannot simply "be projected by [...] cartographic techniques on a two-dimensional plane" (Ryan "Cyberspace",

no pagination). The vast majority of games do have a Euclidean geography and their space can therefore be presented on a map.

Instead of a vertical perspective of the maze in PAC-MAN which gives a birds-eye view, most simulation games present the game space from a more diagonal perspective, combining the benefits of the omniscient map view with the more enveloping quality of a frontal horizontal landscape view. Sometimes, when the field is too big to be shown in total on the screen, a small vertical projection is added to help the player with orientating. Both of these representations are maps, since it is impossible to point out the difference between a real or represented space in these games as the game space itself has no counterpart in reality (Ryan, "Cyberspace", no pagination). This situation reflects the fable of the real-sized map through which real and represented space became entangled which was recalled by Baudrillard ("Simulacra and Simulations" no pagination).

The advantage of a total horizontal projection is the tension that is created because some parts of the space fall behind buildings or trees rendering them out of view. This creates suspense for hidden enemies (Shaw & Warf 1339). In these games, an additional map of the game space can aid the player in keeping an overview while finding her way (Günzel "Eastern Europe", 446). This shows an analogy between real maps or real space and digital maps of virtual space, since both types of maps are employed as an interface for guidance through space. Also, real space and digital space are alike as both of them cannot be perceived as a whole in one instance but need to be explored "from the perspective of a moving body." (Ryan "Cyberspace", no pagination).

Turning to the ways in which game maps are different, we can see that they are not necessarily static as paper maps are. They can both be interactive, enabling navigation to places by clicking on the mini-map and the giving of orders to attack or build, and they can be dynamic

by displaying the progress the player makes in the game (Ryan “Cyberspace”, no pagination), for instance showing more and more of the space as the player explores more land.

The two-dimensional visual presentation of space on the screen originates in a one-dimensional line of code which is transformed into a three-dimensional interpretation in the mind of the player. The latter can be called a truly virtual space: “the pseudo-materiality of its appearance.” (Ryan, idem). This third mode of space can also be seen as “lived space” which is a concept that reflects the subjectivity and dependency of this space on the actions of the player exploring and interpreting it (Günzel “Eastern Europe”, 447). In a way, the playfield can be seen as a personal map, because it shows the result of how the player has used the space by exploring, mining building and defending it according to her views and goals. Though, even when there is no map of the game space in the form of a mini-map or synoptic view of the landscape present at all, the lived space can also be seen as the map that the player draws in her mind based on her strategy and findings. The idea that personal experiences of space show on maps originates from theories about analogue maps by for instance French sociologist and philosopher Henri Lefèbvre who claimed that maps are ‘socially produced’ and ‘ideologically coded’ representations (Lefèbvre 84-85).

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The personal interpretation of space comes to the fore in the work of another French sociologist Michel de Certeau who distinguished a difference between place and space. Place is the more abstract term that can be used to describe the whole of landscape, roads and buildings, and space is the subjective version which differs for every person (De Certeau “Practice”, 117). In this thesis, I will keep to the term space to describe both the abstract notion and the more specific, personal version of space. By doing so my use of the term *game space* still covers the general field of all space in games, also including the aspect of the personal creation of *space* that is mentioned by Lefèbvre and by other researchers which I will study later in this chapter.

An example of how place can become space with personal meanings attached to it is when a certain atmosphere is identified. This can be in the form of what the Romans called the *genius loci* or spirit of a place (Ryan "Cyberspace", no pagination) or the tension that is built up in the suspense setting of possible hidden enemies in the landscape view of game space. Another example is the interpretation of borders and backdrops in the game space. Borders mark the end of the game space and shield off scenery that cannot be explored (the so-called backdrops). Their function of enwalling the play space, and thereby actually losing their function of space because the player cannot navigate in it, has a meaning of showing where the play space ends. Furthermore, it can also serve as a point of reference to the player, because certain landmarks might help her navigating through the actual space (McGregor 543).

Personal meanings attached to space can be expressed in maps. Medieval maps and route maps that people draw from their memory for instance show only certain parts of an area and specifically those where something important happened. Examples of such outstanding aspects are striking buildings, turns in case of route maps, or natural borders and hunting places in the case of medieval maps, leaving the space in between blank (Tuan 72-73, 76-77; Lammes 226). The same idea can be found in the 'psychogeographical maps' made by the members of the Situationist International in the fifties which depicted their navigation through the streets of Paris (Ford 35).

The reason that we can personally connect with space in real life as well as in games is that the world is modelled to human proportions. Just like real world architecture is based on the size of the human body (Tavernor 40-42), architecture in games is also more or less based on game characters, making it understandable for the player (Ryan "Cyberspace", no pagination). She can estimate that she can climb on blocks but should better not jump of houses because they are too high and will hurt her game character (McGregor 538). Sociologist Bruno Latour

describes this as a process in which an object or a scene demands certain behaviour from its participant, which he calls 'prescription' (Johnson<sup>15</sup> 306).

The fact that game players can create their own personal interpretation of the game space by actively changing that space as they move along exploring and conquering more land and by using resources to construct buildings or passageways, means that the question of real or fake is no longer the matter. This reveals that game space seen as maps can be regarded as unreal but that this is no longer possible when studying what the player does with the space. This is why I will now move on to the approach of interaction.

### 2.3.3 Interaction

The fact that games are interactive was the argument the ludologists used in the debate in which they fought against the approach of games as representational texts. It demonstrated that games are a distinct medium. Instead of merely interpreting representations, game players can decide to take another road, demolish a building or load a previously saved game if they are not happy with the way things are going. They have power within the game world to take actions.

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This kind of power within games is called agency. Agency is one of the main attractors of games (Murray 126), because it transforms the player from merely an onlooker into an actor (Aarseth "Cybertext", 113). This is exciting because it provides the player with a choice. Instead of watching the main character walking through a hall with closed doors, the player can decide to open each of the doors to discover what is behind them. This is possible because games are simulations, constituting a *procedural* nature which allows them to "execute a series of rules" (Murray 71). Procedurality thereby stands for the game's ability to present "specific real-world behaviors [such as the opening of a door] into programmatic representations." (Bogost 13). This transforms these doors from fictional doors into simulated doors, because they can be acted

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<sup>15</sup> Jim Johnson is a pseudonym for Bruno Latour.

upon as I mentioned earlier in a discussion of Aarseth's use of the term virtual ("Doors and Perception", no pagination).

An important consequence of the interactive, procedural quality of games which enables agency is that games can only be studied by playing them. This truly proves that games cannot be analysed as texts, since without the player there is no text to analyse (Aarseth "Computer", no pagination), only the cover that came with the game and incomprehensible lines of code.

To be able to explain how players feel that they have power in a game world, while in fact the game only exists on the computer, I have to explain about the bridging effect that interaction has. If the gap between player and game were not closed, a strange situation would occur in which either the player could not play the game because she cannot exert influence on the game at all or in which the player is so-called totally immersed in the game. As I mentioned earlier, the second idea is described as the immersion fallacy because it takes no account of the fact that the player cannot physically leave the real space to enter that of the computer. (Bayliss 99; Salen & Zimmerman 450-451). There is thus a problem between linking the mind which is involved in the game and the body which stays outside the game in front of the screen, which is called the Cartesian body-mind divide.

The splitting of body and mind does in fact not occur as the two stay connected through interaction. The player reacts on events, observes the result and reacts again to form what is called a feedback loop. This theory is inspired by the study of interaction between humans and machines in the area of cybernetics that I referred to in my discussion of VR in chapter one (see Wiener 1948). We could either see the player's actions as input into the game system and the results as output, or "we could flip this terminology around, and consider the player's actions as output, and the game-system's feedback as the input" (Bayliss 98).

The interactive feedback loop that established the link between player and game is not a naturally given. The game should stimulate such interactive operations over the game

environment. Especially the illusion of a surrounding image and a sense of depth stimulate the player's feeling of being in control of the world. What she needs to sustain this illusion especially is the possession of control over the point of view (Ryan "Narrative", 53-54). In a way, we are used to encountering other perspectives in our daily lives that are not our own, for example when viewing photographs or television. These alien perspectives do not confuse us because we qualify them as belonging to someone else or the point of view of the camera. This disturbed connection can only become reconnected once we can steer the perspective to our will in any direction we like (Hansen 93).

Other elements that can involve the player in the game are those that appeal to the body of the player by trying to stimulate bodily feelings and the senses (Ryan "Narrative", 54-56). The most used strategy is the development of ever more detailed graphics on bigger screens to surround the player to a greater extent with the depiction of the game space. This combines agency with the experience of "being there" (Ryan "Narrative", 309). Besides a focus on sight, game developers also try to make games more attractive by focussing on tactile aspects. Controllers are for example developed to look like in-game objects, such as light guns and steering wheels (Lahti 159, 162-163). Our body can even react to events in the game to give us sensations of vertigo or of fear. The sense of speed in a racing game can at least partly be transferred by means of the scenery flying by and background sounds passing (Ihde 11). Fear can be felt in the body in instances where the "affective thrills" of the computer game "spill over into the player's space" (Lahti 163). More subtle accomplishments of real effects are euphoria over a won game or frustration over a lost game (Juul "Half-real", 161).

As I have shown here, the game quality interaction has been seized to defend the rights of game studies to exist as a separate academic discipline, to define an approach that focuses on game play, and regards games as a distinct medium. Regarding interactivity as leading to a



physical connection between machine and player and as leading to real effects demonstrates that this approach cannot profit from the distinction between virtual and real.

Nevertheless, this understanding of the virtual still prevails. It can be seen in the consideration of games as simulations that players can interact with. This does offer more power to the player than that of merely interpreting signs, but still reduces games to representational systems. This can be illustrated by the possibility to split up statements about the nature of games by ludologists Aarseth and Juul to place them into two approaches. The fictional aspect of games falls in the representational approach and the simulative or rule-component can be located within this interactive approach.

The division of real and unreal can also be identified in the theory of the feedback loop. Although it establishes a connection between machine and player, these two are still described as separate components. The machine presents a representation of space in the game which can be easily contrasted with the real nature of the player who interacts with these simulated representations. This real element in the form of the body of the player is the approach I will go into now.

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#### *2.3.4 Embodiment*

The reason that gaming is often seen as an activity that does not need a body, has to do with the fact that most games are played statically. Players sit in front of a screen and only control the game with one or a few fingers (Utterback 218). The introduction of the *Wii* changed this view as players started to stand up and use their whole body for balance and for swinging the controller. Some game scholars took up this new development to point out the importance to study player's bodies (e.g Westecott; Crogan; Kirkpatrick).

I want to make a note that it was not the *Wii* that suddenly changed the way of playing which made this focus necessary. Before the *Wii*, there were other game interfaces that required

the player to use her whole body such as DANCE DANCE REVOLUTION, SINGSTAR and the EYE TOY (Bayliss 100; Forster 92). All these games lead to very much visible and physical game play as the game is controlled by feet, voice or arms instead of fingers. Game machines in arcade halls are even earlier examples of very body challenging game situations which inspired these later home market versions (Lahti 162). Another remark I want to make is that it is not the case that only these type of games require a study of the body. They only remind us that the body is indeed of importance when studying games, also games that only need the player to watch the screen and push one button. This will become clear when I discuss the philosophical theories that support the move within game studies towards the body in play.

The game scholars working on the importance of the body in game play turn towards philosophers who describe our relation to the real world. Often mentioned is Maurice Merleau-Ponty who was inspired by the philosophical method called 'phenomenology' of Edmund Husserl which he used to critique the Cartesian body-mind split that I described earlier. Only, Merleau-Ponty did not study the way in which we interact with a medium but how we perceive the world around us. He states that perception is the principal process through which we make sense of the world. With an existentialist view, he finds that our perception is embodied because we experience the world by being in it and registering it with our senses. We also need our body to interact with the world, so we do not only take sensorial information in, but also act outwardly onto world. By moving we can change our view and position to obtain more information of the world around us through our senses (Merleau-Ponty 203).

This short abstract from Merleau-Ponty's phenomenology of perception amplifies the idea that a virtual game can have real effects. In fact, game scholars use it to point out that there is not so much difference between experiencing the real world or a game world. Through interaction, both worlds can be explored through motion and taken in through our senses. Of course, the simulated world that is presented is never as detailed as the world outside because it

is a simplified model which does not express all the details of leaves or the sense of scent (Juul "Half-real", 170; Frasca "Videogames", 23). Furthermore, the player needs to interact with the world through the controllers and the screen because the world is not directly available but digitally mediated through the computer. A theory which is often used in conjunction with that of Merleau-Ponty to solve this problem is that of Martin Heidegger.

Also writing about the way in which we are positioned in the real world, not about media, is existentialist Martin Heidegger in *Being and Time*. He writes about objects in the world that can be used as tools. Objects that are merely there are 'present-at-hand' ('vorhanden') (Heidegger 42), but when we start to use them as equipments they become useful in that we can do things with them in the world (Sommerseth 766), they become 'ready-to-hand' ('zuhanden') (Heidegger 71). Because tools are in our hands in our daily lives, ready for us to use, they can serve as an almost immediate, direct relation to the world. This means that when we get used to game controllers by playing with them for a while, they almost start to feel natural to us (Crogan 89). This can be exemplified by Merleau-Ponty's example of the blind man's cane which starts to function as a direct medium through which to perceive the world (143). In fact, it can be argued that we as humans can only experience the world by taking into account its technicity, because our bodies are so profoundly related to technology through our use of tools (Stiegler 6-7). While playing a first-person computer game, the medium can feel so natural to us that we can say that the computer becomes our ears and eyes (Shaw & Warf 1336).

To come back to the way in which this use of tools to perceive the world can be used to understand the interaction of the player with the game world I will present a description one game scholar gives of play through a controller: "[While playing, a] complex and dynamic forcefield is established in the palm, wrapped around the controller, and it is changes of pressure and tension here that help to determine what happens in the game." (Kirkpatrick 133). Because of these bodily reactions, an analogy can be made between the pushing of a button in

front of the screen and the throwing of a spear in the game. The actions do not correspond in any way, because the spear requires a much more precise technique of the hand and arm, but nevertheless “[s]omething of the experience of throwing a javelin – its tensions in the body; its discipline; its conscious manipulation of weight and energies – gets condensed into the hand.” (134).

The reflections on these philosophies of Heidegger and Merleau-Ponty have given a deeper understanding of how interaction with the game is intertwined with the use of the body during play. This is true both for games that require big gestures from the players and for games in which small movements suffice. What this insight in theories of embodiment leads to is that we cannot longer strongly state that virtual games are unreal. Besides the real effects that games can have on our social status or state of mind in the form of losing or winning a game, and on our bodies in the form of feelings of anxiety, euphoria or nausea, I have now showed how the perception of real and virtual space in a game are very comparable. Even so, the two types of space remain different because of the digital character of the latter. Through the controller we are free to move through the game world to experience it from different angles and take in different sensorial data and also we are able to interact with the world through the controller as tool, just like in the real world.

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The approach of embodiment, like that of interactivity, requires a different understanding of the virtual. However, the same problem arises as the one I identified with the theory of the feedback loop to describe interaction. Writings on embodiment still present the mediated space and the body as distinctive elements suggesting that the first is unreal and the second real. That this can also be done differently is what I will show by giving an account of the most recent effort within game studies to study games from a performative approach.

### 2.3.5 Performativity

In relation to player's embodied play of the *Wii*, it is suggested that in fact it is as if the player *performs* her actions that mimic real life gestures in the living room as *theatre* (Crogan 93). The player can thus be seen as the actor on the stage in the living room who acts out gestures and movements in front of other players online or in the same room and onlookers as public. This analogy suggests that there can be made connections between theatre and games, which is confirmed by crossover productions that mix both media. An example of such an intermedial performance is *LARA* (De Châtel 1998), which shows dancers on stage whose performance is influenced by the live images of the game *TOMB RAIDER* which is played by a child on stage.

The link between games and theatre is not that peculiar since the beginnings of game studies brought different media scholars to the field, including ones that focussed on theatre studies. As ludologists warned though, games should not just be compared to other media because they have distinct qualities which set them apart from literature and film as well as from theatre. So why are we able to compare *Wii* play to a performance? To answer this I would like to take a step back in time to explain what this care for performance is based on. This can be clarified through the performative turn in science which is rooted in the 1940s and 1950s. In this period, attention began to be paid in the social sciences and the humanities to human behaviour as consisting of performed practices (Thrift & Dewsbury 411).

During the performative turn, concepts from performance studies were changed to make them useable in this new context, which is reflected in the use of the term *performativity* instead of *performance*. While *performance* stands to a framed action, whether in a theatre or in daily life, that is a rehearsed double of earlier behaviour (Schechner 2, 28), *performativity* refers more specifically to the creative act which produces something new and more broadly to any practice in daily life, also ones that are spontaneous and untrained. Nevertheless, there are different strands of writing about performativity (Thrift & Dewsbury 411) which show a discrepancy

between an attributed innovative or iterative character. This leads to a discussion whether performativity enables a way to go against norms because of its creative value or that it only confirms existing norms because of its element of repetition.<sup>16</sup>

I choose to focus on the first mentioned idea that performative acts lead to the creation of something new. I thereby follow the understanding of performativity that comes forward in a method that is being used to study this performative aspect of game play. It is that of non-representational theory as developed by human geographer Nigel Thrift under influence of the performative turn. The move towards the use of non-representational theory to analyse games is caused by a recent interest among human geographers to study virtual spaces instead of real spaces (Shaw & Warf 1332). Non-representational theory was not specifically set up to study computer games or their player but to analyse human actions in general as practices (Thrift "Non-Representational", 12).

Non-representational theory stresses that to analyse game play as a performative practice, the player as researcher needs to pay attention to different knowledges that she combines during her practice. One type of knowledge is the attachment of meanings and creation of personal maps while traversing game space, which I discussed earlier, but they also include unconscious and practical knowledge (101-105). The unconscious and practical knowledge that is gathered and used during play, points to an awareness of feelings and emotions. Examples of such feelings are the proprioceptive effects on our bodies that are caused by our motion or position while we experience space through sensory receptors in our body. Another example of these feelings is the sense of fear or excitement when experiencing speed in a racing game. These *affects* as these feelings are called by an umbrella term, are not always conscious and describable but they can nevertheless be seen as a kind of thinking which takes

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<sup>16</sup> In her book *Gender Trouble* (1993), Judith Butler for instance explains that gender is not a set of body essentials but a practice. By performing prescribed representations of gender, we materialise our body in a certain way (Butler 13). Butler's work on performativity has been very influential as it points out how radically performances can shape bodies through repetition.

into account the effects of the events in our surrounding on our body (Thrift “Non-Representational”, 175)<sup>17</sup>. The interaction between environment and our bodies thus influences our perception of the environment.<sup>18</sup>

The creative aspect of performative practices can be explained by looking at the interaction between different levels of space. As I showed in my analysis of maps and game space, players are working within the game field while using digital maps of that field and interpretations of these spaces in the form of personal mind maps or by perceiving the game field as their personalised map. The alternating use of our static physical perception of space and our sensual experience in movement causes the player to be posited in an in-between situation (Massumi “Parables”, 58-60). The continuous switching between the spaces causes “a topological rhythm between [two types of space], between our actual perception of the 3D world and a virtual proprioceptive experience of movement through it.” (Doruff 1). In the situation of the in-between, a convergence between these two dimensions of space comes about which *creates* space (Doruff 5). While playing, the different spaces of playfields, maps and personal interpretation come together to form one understanding of the space. This new reality of space is a creation that is produced by the player in interaction with the medium.

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The other space, or virtual space if you like, that is created when multiple spaces come together is something that we encounter very often today because of our frequent engagement with audiovisual media (Weber 381). This allows the statement that the virtualisation of real space is not something peculiar that only happens in certain settings, but is in fact a regular element of space ‘as such’ (Crogan 94). And this means that it is not a synthetic addition to real space but rather something that comes forward out of our creative nature which makes us

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<sup>17</sup> Nigel Thrift names Spinoza, Deleuze and Darwin as important theoretical influences of the theory of affect (Thrift 175-182).

<sup>18</sup> Nigel Thrift and John-David Dewsbury remark that the idea of this direct relation between mind, body and environment has even influenced the study of cognition which used to be anchored in the classical cognitive model of representation (415).

engage playfully with the world around us. Real space therefore does not exist without this playful element of this creation of an elsewhere which is always part of the real.

This new direction in game studies which sees the role of the player as a performer cannot be described with the opposition between real and virtual. Regarding game play as a performative practice opens up theories of embodiment and the idea that the congregation of different real and mediated spaces shapes a unique experience of spatial reality which combines embodied feelings and mental interpretations. This brings into question the idea that virtual space is unreal, as the bodily feelings, experiences and mental creativity that are involved can be classified to really exist. The conception of space that is created during game play is real as are the processes of interaction through the body that enable this creation. Also, the different elements involved in this creation are not regarded as separate entities but are merged together. The origin in geography calls for attention for the extent to which this approach respects the medium specificity of games.

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### **Chapter conclusion**

Since the beginning of game studies as a separate academic discipline, a lot of new approaches to game space have been explored. One of these approaches studies the interactive quality of games which gives players agency and makes games a unique medium worthwhile of study. It is connected to the approach which focuses on embodiment and shows an interest to study player's bodies. The combined qualities of interactivity and embodiment led to attempts to study the performativity of game play by seeing game play as a practice that actively creates new spatial realities. I have pointed out that the use of studies of interaction, embodiment and performativity to research space in games leads to a problem if we still hold on to this meaning of the unreal. These approaches to games especially involves the analysis of so many real processes of interaction and perception, real effects on the body of the player and the analysis



of a real conception of space that is formed while playing. Answering the question posed at the beginning of this chapter, I should thus conclude that the approaches of interactivity, embodiment and performativity cannot be combined with the notion of the virtual as unreal.

I demonstrated that game scholars within the approaches of interactivity and embodiment still hold on to the notion of the virtual as unreal. This is striking as these approaches were developed as a result of the narratology/ludology debate to contrast the approach of games as representational texts. Instead of providing a fundamentally different method, the basic principle of regarding games as virtual and thus unreal remained unchanged. The performativity approach, with its precursors in the approaches of interactivity and embodiment, does depart from this basic principle. The use of representational theory as an alternative basis for analysis of space points out that this aspect of games can be studied regarding it as real. I want to stress that it is still possible to distinguish between real space and space in a game, because the latter is digital and mediated while the first is not. However, this use of non-representational theory within this approach offers a refreshing insight that could aid in the construction of a new understanding of the virtual. This should incorporate both a notion of the virtual as real and a conception of the convergence of elements involved in the play process and should do justice to the critique of the ludologists to study games in their own right. In the next chapter, I will continue to look for a theory that can provide the fundamentals for such a terminology.

### **Chapter 3: The virtual and the actual**

The answers to the questions I posed in chapter one and two provide a justification of the premises that form the fundamentals of my central research question. I have established that the term virtual is used in the meaning of unreal, even by scholars who approach games as an interactive and embodying medium. Together with performativity, these form the approaches to game space that do not comply with this notion of the virtual. To continue my research, I will now move to answering the next sub-question: what requirements should an alternative understanding of the virtual meet?

In the previous chapter, I discovered that this new terminology of the virtual should at least follow three principles. These are an understanding of the virtual as real, of the merger of the elements involved in play (player, game space, machine) and respect for the medium specificity of games. I will not construct an alternative understanding of the virtual from the ground up, but will analyse an alternative interpretation of the virtual that I have not yet discussed. A critical discussion of this conception of the virtual and its background should offer further insights in the needs that have to be met to formulate a new terminology of the virtual which respects the abovementioned three points.

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#### **3.1 Revisiting the history of the virtual**

In her quest for finding the different meanings of the term, literary scholar Marie-Laure Ryan is able to distinguish three conceptions of the virtual. The first is the meaning that originated from the field of optics, in which the study of physical properties of light showed the fake character of reflections. The second side of the virtual is its connection to information technology as it almost always describes digital media. The third meaning of the virtual lies in the area of scholastic philosophy and can be traced back to the writings of Aristotle about virtual and actual existence

between which he made no radical opposition (Ryan "Narrative", 26). Here, the virtual indicates potentiality (13).

The Meaning of Virtual	
Actual	Virtual
enacted	potential
factual	counterfactual
accomplished	possible
closed	open
material	mental
concrete	abstract
particular	general
complete	incomplete
determinate	indeterminate
corporeal	spectral
bound body or object	aura
kernel	irradiation
temporal	atemporal
inscribed in space	deterritorialized
singular	plural
manufactured object	blueprint, code
present	past and future
here	there
us	them, the other (as imagined)
solid, tangible	evanescent, nontangible
figure	ground
visible	latent
presence	absence
presence	telepresence
face to face	mediated
mechanical, printed	electronic
matter	information
space	cyberspace
that which counts	that which does not count
being	presenting
identity	passing as, role-playing
serious behaviour	make-believe
lived experience	fantasy and dreams
fact	fiction
essence	appearance
authenticity	fake, simulation
truth	illusion, falsity
original	copy, double
represented, referent	image
virtual	real (theme of the virtual and the real exchanging places)
.....	real (theme of the disappearance of the real)

NOTE: At the top, the scholastic opposition of virtual to actual. At the bottom, the optical opposition of virtual to real. In the middle, the popular association with computer technology.

Figure 3: Diagram of different meanings of the term virtual (Ryan "Narrative", 28).

To clarify the connection of these three meanings of the virtual, Ryan has placed them in a diagram (see Figure 3) which shows their positions on an axis with two poles. The definitions and their connotations are positioned between the virtual as potential at the top and the virtual as fake at the bottom, with the understanding of virtual as connected to the digital in the middle.

Ryan's diagram shows how virtuality of games can be argued in two ways: either downwards towards showing how what they present is fake (following Baudrillard's simulacrum theory), or upwards towards arguing that the virtual offers potential (27). This latter argument, Ryan points out, follows the theories of Canadian media scholar Pierre Lévy, which I will explain further shortly.

It should come as little surprise that several ideas presented in this diagram are familiar by now. The idea that games are made up of *representations* of the real world was expressed by both Jesper Juul ("Half-real" 131-133) and Espen Aarseth ("Doors and Perception", no pagination; "Allegories", 163). Later, I pointed out that these ideas were influenced by semiotic theory and Baudrillard's writings about the simulacrum. The second source of inspiration explains the idea of images as copies of the real which leads to a situation in which the real and virtual exchange places and the real disappears altogether ("Simulations", no pagination). This disappearance of the real is indicated at the bottom of the diagram. Moving up a little in the diagram, we meet the notion of the fake simulation. Also following Baudrillard's writings, we saw the interpretation of games as incomplete simulations of the real expressed by Gonzalo Frasca (Frasca "Videogames", 23-24), and again by Juul (170-173) and Aarseth ("Doors and Perception", no pagination).

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The distinction that Ryan presents in the diagram between make-believe and serious behaviour resonates the statements that games are make-believe and fictional (Juul "Half-real", 121-122, 164; Murray 110; Aarseth "Doors and Perception", no pagination) and thereby stand outside serious everyday life (Malaby 96). Moving further up in the diagram we meet the conception of the virtual as non-tangible which is in line with its association with digital media and subsequently we reach the idea that the virtual is programmed in code. The latter was found in accounts of the programmed dynamic model underlying games by Aarseth ("Doors and Perception", no pagination).

The ideas of embodiment and performativity that I introduced as new insights in game studies can be found at the near top of the diagram (“material” and “corporeal”) which shows that they are closer to the handling of the virtual by Lévy than that by Baudrillard. Therefore, I will now go into Lévy’s theory of the virtual and actual that was inspired by the work of French philosopher Gilles Deleuze. I will analyse the theory of the latter hereafter because Lévy specifically makes use of his theory of the virtual to outline the characteristics of new media. This offers the possibility to inquire which requirements need to be fulfilled to stay true to the principle of the unique qualities of games.

### 3.2 Levy’s virtual

Lévy creates two conceptual pairs: *possible and real* and *actual and virtual* (Lévy 3). The latter dynamic pair is the one I will zoom in on, but I will do this with the help of the first more static pair. All the four words are used by Lévy in the form in which I just presented them but also as the conjugations *virtualisation*, *actualisation*, *potentialisation* to describe the movements towards these states. The conjugations *virtuality*, *actuality* and *potentiality* are adopted to outline the states themselves or things that have the characteristics of that state.

Potentialisation and potentiality seem to be the odd ones out among these terms, but they originate from the term *possible*. Lévy states that “[p]otential refers to [a] predetermined set of possibilities.” (Lévy 3).

The states from the first conceptual pair, possible and the real, are quite close together. The possible does not exist yet (Lévy calls it a “ghost reality”) but is nevertheless “already completely defined” (3). The fact that both the possible and the real are fully formed and substantial is what makes them static and patent. The actual and the virtual on the other hand are dynamic as they constitute the driving forces behind the real and the possible. The virtual should be seen as referring “to problems, knots of trends, constraints, forces and goals” which

necessitates the actual as an “active problem solving process.” (3-4). This stream of problem creation and solving can be classified as events which reveals the dynamic aspect of the actual-virtual pair.

An example that Lévy uses to help understand what the terms stand for is that of the tree. One seed of a tree can grow out to a full tree and as such the seed is a virtual tree. It is however impossible to accurately predict the shape of the future tree from the seed because we do not know which actualisations will occur and which of these will in turn be selected as a possibility. In fact, we cannot be sure that there will be a future tree at all because something might go wrong with the seed preventing the realisation of the tree (Lévy 3). What happens in this case is that the actualised idea and worked out possibility that the tree dies before it is full-grown gets realised.

The example of the tree shows that movements from one of the four states towards another are possible. Actualisation of the virtual stands for the solving of the net of problems of the virtual. Potentialisation in turn further defines a solution from the actual which can come into existence with a realisation. Movements the other way around also exist in this theory. A virtualisation is a move from the particular towards the general, from solution to problems. Virtualisation is also called *deterritorialisation* because it can be described as “an exit from particular space and time coordinates” (4). Apart from qualifying movement as having a two-way direction, Lévy also stresses that the movements between the states is ongoing. The actualisations, potentialisation, realisations and virtualisations are never-ending like a *Möbius strip* (Lévy 6,9). The Möbius strip, which is a surface that can be made of a strip of paper of which one end is twisted and then attached to the other end to form a single strip, is exemplary for the movements between the states because it has no beginning or end. I would like to add that because it is impossible to define the inside or outside of the strip, this model is also able to represent the fact that movements can occur between all the different states as these should

not be seen as strictly defined. This characteristic of the Möbius strip is formed through the twist that is given to the paper whereby the left edge is connected to the right.

Other qualities of the virtual that Lévy names are its inexhaustibility, which enables an endless number of actualisations, and the fact that the transformations that are made when moving from one state to another are definite (Ryan 36). Once a tree has grown it cannot return to its own seed, it can only produce new seeds which can follow a whole different path of life.

### *3.2.1 Identifying the virtual and actual in game studies subjects*

Now that I have given a short overview of Lévy's theory of the virtual, I will turn to some of his examples to find out if his theory affords insights in how a fundamentally different understanding of the virtual can be formulated that enables the consideration of the virtual as real, the description of the elements in game play in convergence, and pays tribute to the characteristics of games that ludologists advocated.

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The descriptions Lévy gives of the virtualisation of language, information, and of technology and bodies provide elements for comparison to the approaches in game studies towards respectively games as interpretable texts, games as interactive media, and game play as an embodied practice, that I identified in chapter two.

The first approach is not part of the three approaches that require a different understanding of the virtual. I do want to look at it here because theories of the scholars who initiated the move towards a study of games for their own sake appeared to be intertwined with this representational approach. I hope to find a way to reconnect these writings about representations to these ambitions.

### 3.2.1.1 virtualisation of interpretable texts

The first subject that I analyse in the light of the virtual and actual is that of language. On the one hand language can be seen as a virtualisation because it enables us to access past and future spaces and times. This happens when we ask questions, tell stories or access our memory to tell tales of the past (Lévy 4). These are virtualisation processes because they constitute a move towards new subjects which form as new knots of problems. These problems lie in the ability of things to mean multiple things which is a quality that can open up other spaces and times through association.

On the other hand then, language can be seen as a process of actualisation when we focus on the interpretation of language. When interpreting information, I “connect it to other information [the context] in order to make sense, [and] when I use it for decision making, I actualise the information.” (Lévy 8). The actualisation thus happens on two fronts: Firstly, in the combination of information to other information from the context to form solutions to the problem that lie in the virtual aspect of language. Secondly, language constitutes a process of actualisation when one solution is selected and a decision is made and uttered.

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An addition to be made is that the carrying out of an action following a decision can be seen as “perform[ing] some creative act” (8). Furthermore, the last two stages in the interpretation process which lead to an action can describe the interactive quality of a text, which is the subject I will now turn to for analysis.

### 3.2.1.2 Virtualisation of interactive media

The description of the virtualisation and actualisation processes of information can be used to describe the nature of interactive media such as games. Digital information can be seen as virtual information according to Lévy because it needs to be actualised before a player can perceive it. The virtual data can be stored in binary code on a hard disk or be the product of a



model that calculates output from inserted data. Actualisation takes place when the digital data is translated to form an image or text on the screen or in the form of audio through the speakers. On the user part, interacting with the digital information actualises the virtual information. In the case of a computer game this means that one game contains an indefinite number of game stages and outcomes of which only one possibility is actualised each time the game is played (6).

This exemplifies the selective nature of the actualisation process in which virtual data takes a definite form when it is realised through interaction between the user and the machine. The virtual quality of the digital data comes forward in the way it enables an endless amount of different directions in which it can be actualised.

Apart from interactive texts such as games, which are virtual in nature, Lévy distinguishes two other types of texts. These are actual and have limited user value. They can either display a selection of “[t]he totality of the information that they contain” (7) or an actualisation of all of it. I would like to illustrate the first option as a walkthrough of a game, which requires active interpretation by the player to use the directions for her specific game path, and the second option as a fully detailed list of all the possible walkthrough paths, which would take an enormous amount of space and time to read.

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The distinction Lévy makes between certain texts that are purely virtual and others that are actual in nature seems to be rather odd in relation to his description of free-flowing movements of virtualisation and actualisation of both language and interactive texts.

### 3.2.1.3 Virtualisations of bodies in play

Concerning embodiment, Lévy’s account of the virtualisations of technology and bodies seems to offer a good source to find a manner to describe the real elements of games. First of all, Lévy discusses Heidegger’s writings about tools as enforcing movements of virtualisation and

actualisation. I used this theory of Heidegger earlier to show how player and computer could be connected to show that players experience a game world through their senses and movement of their body because of the connection that is made through controller, screen and speakers which function as tools. As this idea of the tool makes it complicated to speak of the differences between real and unreal experiences, another meaning of virtual was needed.

The virtual as a pair with the actual promises to supply grounds for this alternative as it can be used to describe virtualisation as a materialisation process. The materiality of a tool namely opens up new actions and unforeseen uses of the tool. The tool is designed with the focus on a problem that the tool can solve, but the design is so open-ended that the tool has a virtual quality in that it can be used to solve other problems as well (Lévy 4). A hammer was designed to drive nails into something hard but it can also be used as a paper-weight. The tool opens up “new spaces and times, new speeds” (4) by requiring the learning of new gestures to configure your body to new abilities which modifies the characteristics of your body (5).

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The virtualisation and actualisation of the tool shows that the body is not made immaterial or disembodied while using it. The engagement with tools and can thus be described like this: “the body comes out of the body, it acquires new speeds, [...] it multiplies itself. All this process is not at all a disembodiment but, on the contrary, a complex re-embodiment, an heterogenesis [sic] of the body.” (Lévy 5).

### Sub-conclusion

Looking at all three areas, the theory of the actual and virtual as discussed by Lévy offers several useful components that can be taken in to lay down an alternative account of the virtual. I divide the productive insights that Lévy’s theory offers into five points. The first point indicates the possibility to regard the virtual as real, which could nevertheless do with a more thorough argumentation to reveal a real requirement for the new terminology. The other points can be

related to specific characteristics of games and I therefore regard them as requirements for a new terminology to be able to fulfil the principle of attention for the medium specificity of games.

1. Lévy acknowledges that **actualisations and virtualisations constitute reality** and thus exist, which explains how games can have both virtual and real elements;
2. The description of the virtual as an inexhaustible web of problems that can be solved (actualised) in an **infinite** number of ways comes very close to the understanding of games as being very open-ended;
3. The comparison of the movements between virtualisation and actualisation to a Möbius strip foregrounds their **multi-directional** and **never-ending** nature;
4. The **definite changes** that are constituted during actualisations can be compared to the irreversible actions by a player;
5. The **unpredictable** nature of the movements of actualisation and virtualisation are similar to the unforeseen outcomes that games have;

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A mayor problem with Lévy's account of the virtual however, is that he tries to give examples to his theory in which he tries to point at instances of the virtual or the actual. He thereby impoverishes his own theory because he falls into the same deadlock that is effectuated by the opposition of the virtual to the real. By pointing at instances that are either virtual or actual he demonstrates his claim that the virtual is the opposite of the actual (6). Lévy seems to be aware that the virtual and actual should rather be regarded as processes since he refers to the Möbius strip as a symbol for continuous movement (9). Nevertheless, he does hold on to the static division into virtual and actual in his examples and thereby annuls the advantages of his description of the actual and the virtual to understand computer games.

To enable the construction of an elaborated terminology of the virtual that does justice to my remarks, I will now move on to find out how to overcome the problems to Lévy's theory in

a way that maintains the positive insights that it brings forward. Furthermore, a substantiation is needed for the statement that the virtual and actual are real, and also, insight into how game elements can be argued to be merged together is still missing.

### **3.3 Fundamental differences**

I indicated that my difficulty with Lévy's account of the actual and the virtual lies in his use of dichotomies (the virtual as opposed to the actual instead of opposed to the real) and his classification of examples as either virtual or actual. I showed how this usage of the virtual and actual does not completely serve to do justice to the flexibility that the development of new approaches in game studies requests. It can be used to ground the real nature of game space and the unique interactive quality of games, but not to account for the convergence that was brought to the fore as a requirement in my analyses of performativity. Now, I would like to go a step further in order to reveal my problem with Lévy's approach of the virtual which reflects the problem that is caused by the use of a dated notion of the virtual in innovative approaches to game space. I will give an overview of the underlying premises to the methods in science that are incompatible with the study of the virtual and actual as real elements because they show a tendency to clearly divide phenomena in either-or boxes. This classification strategy is similar to the one Lévy uses when giving examples to his theory which clarifies his stumbling on this point. It is similar as well to the classifications in the feedback loop theory which splits up player, machine and game. By going into the background of these scientific methods and showing the developed reactions towards them, I will be able to indicate how the new terminology of the virtual that I try to develop for a study of game space through performativity should be fundamentally different to not fall into the same trap.

### 3.3.1 From empirical sciences to epistemology

The word *science* originally meant 'knowledge' and stood for a broad range of knowledge including natural philosophy, epistemology, aesthetics, ethics and metaphysics. From the Middle Ages and the Enlightenment onwards, *science* began to stand for systematic recorded knowledge of the world around us. It thus entailed what was formerly known as natural philosophy. Since then, the 'scientific method' began to be used to ensure that gathered knowledge is true. It meant that discoveries have to be based on observation and experimentation to test formulated hypotheses. This base in empirical evidence means that scientists trust on their senses to give authentic and neutral data about the world, which is called *positivism*.

As I indicated, scientists not only started to record knowledge of the world but also started to systematise it. This meant that models and formulas could be made to describe phenomena on the basis of discovered relations that were formulated as rules of nature. A difficulty is that certain phenomena are so complicated that they cannot be caught in restricted descriptions to fit a system and that they cannot be imitated precisely in a model (Thrift "Spatial", 27). This is no problem as long as new, smaller definitions and formulas can be added to fit the new findings, but since a model is by definition a simplification this refining can go on forever but will never reach the ideal similarity with the real. A more fundamental wrong-doing can be seen in the fact that knowledge from sensory perception is taken as truth and serves as the bases of these systems which are then used as study material themselves (Waldby 29).

Academics outside the natural sciences showed their reservations by concentrating on *epistemology* or the study of knowledge which tries to expose what we know and how we know. In this light, linguists for example looked at semiotics to indicate that communication is based on a system of signs. Another example is constructivist Stuart Hall who I mentioned in chapter two as being responsible for setting up a system of encoding and decoding of messages. Theories like

these treat subjects and their bodies as being discursive because they are always in a process of signifying. They can either resist to dominant ideas or subvert them, but they cannot escape these ideological apparatuses, because every action that is deviating from the hegemonic opinion and from existing subverting ideas is immediately classified as subversive and thereby taken up in the system (Massumi "Parables", 1-2). This means that although trying to escape the restricting systematic of scientific research, linguists and constructivists are still making use of a limiting system out of which nothing can escape. Jean Baudrillard as a post-structuralist did try to get out of this ideological system by turning it up-side down. He attempted this by arguing that the signifying practices that lay at its basis no longer exist since signs and the real have become the same. Still his theory cannot account for the real aspect of embodied interaction and of the creative shaping of space during play.

For this, a more fundamental alteration is needed that regards game elements as the player, game and machine as real and intrinsically connected elements. To investigate these characteristics of game space, I can thus not suffice with an epistemological method that focuses on the construction of meaning *about* the real. An *ontological* method is needed that enables the study of existence and reality itself, which I will demonstrate with an overview of what ontological research is.

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### *3.3.2 Metaphysics and ontology*

The study of *ontology* is part of the branch of philosophy called metaphysics which stands in contrast to the positivist standpoint that knowledge from sense experience is authentic.

Metaphysics thus studies the nature of reality in a non-empirical way. It opens up the study of unmediated changes in the body such as feelings that are not necessarily conscious which I indicated in chapter two as being of interest in research on performative play. A discursive study of the body leaves these out because they are not part of signifying processes and difficult to

approach. Feelings are preferably relegated to biological studies because they involve the naive, instincts and nature. Regarding feelings in an ontological light means considering them as a reality that is part of the body. This makes it clear that an epistemological study leaves something out of the picture. By describing the relation between the body and change as discursive, movement and sensations are bracketed off in this formula: “body – (movement/sensation) – change” (Massumi “Parables”, 1).

According to an ontological approach, the only way in which we can understand the body in change is by looking at the middle part of the formula. This is because your body moves and feels. It moves and feels at the same time so that “moves as it feels, and it feels itself moving.” (Massumi “Parables”, 1). This means that there is “an intrinsic connection between movement and sensation whereby each immediately summons the other” (idem). The result is that every small displacement in the body (‘movement’) calls up a feeling (‘sensation’) which combines with other feelings and becomes stronger and fierce enough to lead to an action, an outcome which is mostly unpredictable (idem). Change thus comes from the body itself or from its relation with the environment, which is an unmediated non-discursive relation (Thrift & Dewsbury 415).

Bodies can be seen to move in any direction without being pinned to one specific point on a prescribed framework, enabling it to pass positions of the in-between and positions that were not previously imaginable. This freedom articulates the problem with two issues that I signalled earlier. It shows the background of my problem with the substitution of the opposition between the virtual and the real with the opposition between the virtual and the actual (Lévy 6). In addition, it underpins the insufficiency of Baudrillard’s simulacrum theory to take account of the actions and changes that come about when players interact with maps. Declaring that these maps, their interpretations and new creations of space are either real or unreal, and then stating that this does not make a difference because the two concepts are the same, does not make room to discuss the exact feelings and movements that take place in the body during these

processes. Baudrillard's simulacrum is too limitative in this respect because it does not overthrow old systems of representation that limit us by labelling everything in categories. In this respect a further going simulacrum is needed which is not normative, regularising and reproductive of old views (Massumi "Realer than Real", no pagination).

The metaphysical ontology of seeing the body, change, movements and sensations as realities is the prominent approach that enables the overthrowing of stratifying meanings. The reason is that it is not based on limits which form fixed positions but on multiplicities of an inexhaustible number of in-between positions. This changes the reality of movement in a way that I will explain now. Since we are used to measuring movement in speed and distance and capturing it in images, an object that moves in our minds takes the form of an object traversing a certain amount of positions in time. Allowing ourselves to see more positions by thinking about the movement from a closer point of view, or concretely by using high speed cameras does not change this static, positional mode of perceiving movement. It actually brings movement to a total standstill, because trying to approximate movement as precisely as possible would involve an indefinite number of points along the way. The flight of an arrow would then be seen to have a starting point and an end point in the form of a target, and the flight itself would be transformed into a path with innumerable targets. Allowing the arrow to pass through all the target points means it never reaches its end goal because there will be no end to the targets along the way (Bergson 308-310).<sup>19</sup>

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Instead, metaphysics suggests regarding the arrow as always being in movement between two points from the moment it is shot till the moment it reaches the target (Massumi "Parables", 6). Only in retrospect, we are able to reconstruct the movement by calculating the exact position at different times along the flight or showing freeze-frames of the high speed camera. This means that our scientific measurement of speed as well as that of space, are ideas

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<sup>19</sup> Henri Bergson explains this way of dealing with movement in the story of Zeno's arrow (308-310).



about the world that are constructed on the basis of their realities in which motion and space are continuously in movement. The body in movement is never in one position but always in passing between points and the ground and sky are not static but always made up of moving particles. This dynamic reality of relations is lost when we start to measure and thereby derive static definitions from movement (5-7, 10).

Summarising, the study of ontology is part of the metaphysical branch of philosophy and is all about continuous movement and processes which cannot be trapped in solid definitions or oppositions. This is where the positive qualities of the theory of the virtual and the actual were lost in the handling by Lévy who too coarsely tried to illustrate the theory with distinct examples and explicit relations to define the positions of the terms against each other. With the insight from this overview of the developments in science in mind, I would now like to explore the notion of the virtual and actual that comes forward in the work of Deleuze. As Deleuze writes from a metaphysical standpoint, I expect that his account of the virtual is more true to the ontological insights I presented above.

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### **3.4 Deleuze's virtual**

By giving a very short abstract of the most vanguard concepts in Gilles Deleuze's work I want to demonstrate how his understanding of the virtual corresponds to a metaphysical view of reality and is different from the way Pierre Lévy employed it. I will try to point out how these dissimilarities aid to form an understanding of an alternative to the virtual as unreal in the combination virtual and actual. I will discuss the theory of the actual and the virtual in the light of the more general tendencies of metaphysics with its description of the real in terms of movements, processes, abstractions and feelings.

Deleuze's metaphysics is all about movement. Processes like those of virtualisations and actualisations are described to be continuous and mutually influencing, like a Möbius strip. This

means that they are real in the sense that a movement in any direction involves a change which cannot be reversed and creates something new, aspects that were already signalled by Lévy. This kind of movement is called a *becoming* in Deleuze's terms and does not involve one thing becoming another by taking over its resemblance in an imitation but a reconfiguration of both subjects in which their particles combine to form something new. The metaphor of the Möbius strip points to the fact that the new form is not a final destination but can transform again in new becomings in a multiplicity of directions. Becomings stand for the ever changing and never stable or true quality of reality (Deleuze & Guattari 237-238, 272). This processual, unstoppable and multidirectional description of becomings echoes the critique that I formulated against Lévy's exemplifications of the actual and the virtual. Instead of describing concrete objects, I showed how they are in fact processes of association and definition that can take any direction and never reach a fixed, still position.

The virtual and actual can be described with an equal focus on their reality and on their movement. The metaphor of the atom serves well to describe the characteristics of the virtual and the actual and their relation. The actual is then seen as a particle that is surrounded by "a cloud of virtual images" (Deleuze "The Actual", 148). These images are virtual because they constantly change and renew themselves through processes of emission and absorption, creation and destruction" (idem). The actual can be described as a perception which is surrounded by virtual images as memories, which can be so ephemeral that they are unconscious (148-149). This explains how ever new associations can be formed out of the actual because the virtual continually changes and expands and leads to new actualisations. It also provides a way of describing how a perception is entangled and shaped by feelings and thoughts that might not even be noticed, as is the case when a player experiences space in a performative way. Her unconscious may contain movements of virtualisation that shape her view of the space even when these feelings are not felt.

The creative power of exploring space in a performative practice can be said to come from the intricate relationship between the virtual and the actual. “The actual and the virtual coexist, and enter into a tight circuit which we are continually retracing from one to the other.” (Deleuze “The Actual”, 150). This continuous movement between the one and the other leads to the impossibility to differentiate the two, for example by saying that the virtual is the opposite of the real or pinpointing the difference between two media applications by calling the one virtual and the other actual. “It is not so much that one cannot assign the terms ‘actual’ and ‘virtual’ to distinct objects, but rather that the two are indistinguishable.” (151). This means that Lévy was partly right to give exact media examples of the virtual and the actual, but that these should be explained as being virtual and actual as always part of process of virtualisations and actualisations.<sup>20</sup>

Studying reality involves studying the body in its abstractness of processes of movement and sensation instead of a more concrete corporeality which looks at form and functions such as Merleau Ponty’s phenomenology of perception (Shaw & Warf 1339). An abstract perspective precisely enables a study of the materiality of the body, the realness of its existence, because abstractness does not involve moving away from matter towards more generality but a way to make connections to other spaces with other real abstractions (Massumi “Parables”, 5; Thrift & Dewsbury 416-417). The abstract, the virtual and the actual are very real indeed. Truthfully, abstraction enables us to reach reality because the more abstract the more we get to movements of virtualisation and actualisation which is what reality consists of (Massumi

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<sup>20</sup> Like Lévy, Deleuze also uses the terms *possible* and *real* besides the virtual and the actual. The difference is that Lévy sees the possible and the real as a separate pair that intensifies the movements of the virtual and actual further in a selective direction (the possible) which can come into existence (the real). The possible is only a “ghost reality” (3). Deleuze on the other hand uses the term possible or potential to describe the multitude of directions actualisations and virtualisations can take and the term real to indicate that all of these processes, also the possible, actual and virtual, are very real (Massumi “Parables”, 4). The fact that Lévy sees the possible and the real as one conceptual pair and the actual and virtual as another may be traced back to Deleuze’s distinction between the *realisation of the possible* (forming resemblances and imitations and stable end products, something Deleuze argues against) and the *actualisation of the virtual* (emergence of differences, possibilities and new creations) (Thrift & Dewsbury 416).

“Parables”, 5). This focus on the abstract to reach the real helps explain the fact that the virtual and the real are both part of reality and can thus coexist which already surfaced in my analysis of Lévy’s virtual.

The movements towards abstraction are characterised by unpredictable connections instead of categorical relations and can therefore best be illustrated with a rhizomatic structure. The rhizome offers an understanding of these processes as it is an open, non-linear model in which different branches can be connected to other far away and contrasting branches (see Deleuze & Guattari 7-9).

Concerning the movements and sensations of the body that cause changes in the formula “body – (movement/sensation) – change” (Massumi “Parables”, 1) also involves an abstract perspective. The movements and sensations can be seen as the energy that catalyses the processes of virtualisation and actualisation. They consist of feelings, passion, emotions, autonomic reactions in the skin, embodied knowledge, and intensities which are all grouped under the term *affects* (Thrift “Non-Representational”, 175-182; Massumi “Parables”, 25). The usefulness of an understanding of affects as the bodily source of input for processes which lead to differences, movement and new connections lies in its opportunities to describe the embodied interaction with games as a process which creates new spaces. These are not only new perceptions and understandings of space which can also be formed through interpretation but also new spatial realities that can be experienced, acknowledged and felt by the player.

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## **Chapter conclusion**

In this chapter, I presented an alternative definition to the virtual as unreal, one which regards the virtual in a pair together with the actual as describing processes. I explained that the meaning of unreal originates from an epistemological method that focuses on the construction of meaning and can therefore very well account for interpretations of representations but not

for the real nature of the virtual that come forward in the three new approaches to game space. This indicated that theorists within the approaches to game space of interactivity and embodiment need to breach with the methods they used previously to take up the study of ontology.

Answering my question for this chapter, I can say that in order to construct a terminology of the virtual that can account for the reality of the virtual, the merging of elements involved in game play, and the medium specificity of games, three requirements have to be met. First, an ontological basis is needed which explains how virtual and actual constitute reality in their abstractness. Second, this understanding of reality has to include a focus on the removal of predetermined categories which is also stimulated by an ontological method. Third, the virtual and the actual have to be seen as processes with dynamic characteristics to be able to describe the specific qualities of games.

I would like to proceed by accumulating all the useful insights into the virtual from this chapter and connecting them in a coherent way to formulate a terminology of the virtual that can be used to study the interactive, embodying and performative aspects of games.

## **Chapter 4: Redefinition of the virtual**

Over the previous chapters, I have shown that regarding computer games as unreal by calling them virtual does not serve well to describe all aspects of games that are studied in academia. Studying game space as representations or maps thrives well with a definition of unreal signs for the real world that have to be interpreted, but interaction, embodiment and especially performativity involve the player in a way that incorporates the real. In this chapter, I ask myself: how can a new terminology of the virtual be constructed?

While answering this question by formulating a new terminology, I will take care that it does justice to the principles of reality, convergence and medium specificity. My inquiry of the theory of the virtual and actual in the previous chapter revealed that it has to involve an observance of ontological premises in order to realise this and to be truly different from the terminology of the virtual that is used at the moment.

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My effort to establish a new terminology for space in games comprises two parts: First, I will concentrate on the understanding of game play as consisting of processes of virtualisation and actualisation, and second I will establish how we can use the notion of affect to write about space in games.

### **4.1 Virtualisation and actualisation during game play**

In this paragraph, I will work out how game play and especially game space is shaped by processes of virtualisation and actualisation. Before I start, I want to make two preliminary notes about my method for this part of my construction as well as the second that concentrates on affect.

Whenever appropriate, I will refer to scholars who already use an ontological understanding of the virtual in their study of games to illustrate the possibility to use my

terminology in practice to analyse games. I want to stress that these expressions are scarce and always only present a limited part of the understanding that comes forward in my terminology. Moreover, none of these researchers express the reasons for the need for the use of the virtual in this way, which is the fundament for my argument.

To pose clearly the way in which my terminology can be used to study games, I will also alternate my theoretical discussion with examples from a specific game. The references I will make almost all come from the game *PORTAL*, a single player, first-person perspective action game in which the player solves puzzles to progress through the levels. In the game, you play Chell who finds herself in an experiment in which she is led by the voice of artificial intelligence computer GLaDOS through the rooms by solving puzzles. Challenges involve moving blocks, pushing buttons, avoiding fire bolts and deep muddy water (see Figure 4).



Figure 4: Screenshot of *PORTAL* showing portal gun, movable platform with block, red button, fire bolt shooter and level exit door.

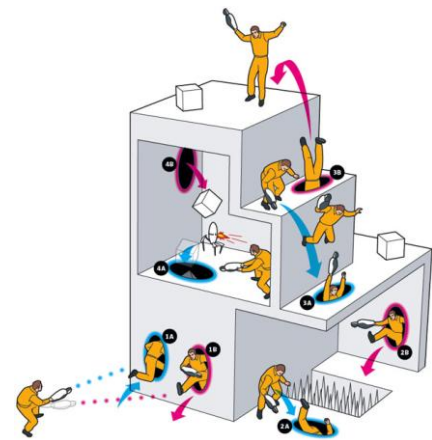


Figure 5: Using *PORTAL* physics to solve puzzles and overcome challenges.

The game stands out through its clever design which transforms the space itself into a real challenge which hinders progress through the fields and in the puzzles. Chell is namely unable to reach most heights and jump most distances that the game presents. She is therefore equipped with a gun which shoots portals in walls and thereby facilitates relocation by entering

through a portal in one wall and exiting through a placed second portal on a wall of an unreachable floor.

To complete the puzzles it is sometimes necessary to move objects through the portals or gain extra momentum to traverse big gaps by shooting an entry portal in the floor and an exit portal in a wall above a gap (see Figure 5). According to GLaDOS this functions following the matter-of-fact rule: “speedy thing goes in, speedy thing comes out.” This innovative game mechanic transforms *PORTAL* from a game in which space is merely the environment in which play takes place and which challenges the player, into a game in which the player has to reconfigure her idea about space. Holding on to the everyday idea of the physicality of space will keep you from solving the puzzles and therefore *PORTAL* lends itself perfectly for an analysis of how my proposed terminology of the virtual enables the study of the interactive, embodied and performative play with space in games.

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#### *4.1.1 Processes*

Games are made up of continuous processes of virtualisation and actualisation. This supports the argument that games have to be played to exist, because only then do these processes come about. Translating the ideas of the cybernetic interaction between player and machine to this new understanding of the virtual, you have to recognise that there is a constant looping of action input and reaction feedback during play. Because of the continuous nature of the interaction between machine and player, the actions taken in a game never stand alone but are always part of a lineage of past and future actions and reactions. Actions are namely preceded by processes of actualisations and virtualisations and themselves cause new actualisations and virtualisations to spin off.

Concrete actions by the player are shaped by complex processes, making player behaviour hard to predict. Actions are always connected to virtualisations in the form of



assessments of possible actions and outcomes and to virtualisations in the form of feelings and associations that the player has when carrying out her action. Because these virtualisations involve connections to past memories and future visions, they are in their turn connected to other actualisations in the form of things that could have been if something had been done differently and to actualisations that might happen at a later stage of the game. Games can be seen as virtualisations of certain concepts (how to build a successful city in *SIMCITY 2000*) and at the same time as actualisations (the player chooses a shotgun in *TOMB RAIDER III* or soldiers can be made after building barracks in *WARCRAFT II*).

Games should not be seen as representational simulations that are interpreted and acted on by players. I pointed out in chapter two that scholars approaching games as interactive and embodying media still hold on to this idea that is related to the notion of the virtual as unreal and is therefore incompatible with their methods. My suggestion to regard games as processes of virtualisation and actualisation both does justice to the medium specificity of games and offers an understanding of game elements and the processes they fuel when the game is played as being part of reality, not as interpretations of fake signs.

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The focus I lay on processes means that games in their totality, their separate elements or depictions in walkthroughs should not be seen as either virtual or actual. The virtual and actual should be seen as dynamic processes, as verbs. This entails that a walkthrough is formed by a process of actualisation but enables further virtualisations as well as actualisations.

I will now illustrate the processes of virtualisation and actualisation further through the game *PORTAL*. To solve the puzzle in *PORTAL*'s Test Chamber 4, the player is required to jump into a deep hole to collect the block that she needs to put on the button which opens the exit door of the level. Since the walls are too high to climb out from the bottom of the hole, the player can only take the block from it by jumping in, shooting an entry portal in the floor and exiting through the portal that was pre-made in the wall of the chamber where the floor is at normal

ground level (Chell does not have the ability to shoot exit portals in this level of the game). This action of collecting the block requires a growing list of thoughts, knowledge, tactics and observations by the player. She needs to know that she:

- cannot climb up walls of the height that surround the hole;
- can shoot an entry portal with her gun;
- can grab the block and take it with her through the hole;
- will come out the other end through the pre-made exit portal;
- has seen the exit portal at ground level when walking to the challenge;
- can open doors by placing blocks on the button;
- etc.

All these thoughts can happen in either order or even simultaneously while performing the necessary steps and involve a future view of what their results will be (how will she reach the end of the level?) as well as memories of earlier experienced actions (the working of the gun and button), assumptions (about the physicality of Chell which hints her inability to climb up walls and keep buttons pushed by her own weight). My description of how to proceed in level four of the game *PORTAL* reveals the tip of the iceberg of the back and forth movements of virtualisation and actualisation that are involved while playing the game.

Picking up the block and moving through the entry portal, the player uses knowledge about the working of the portals that originates from prior actions. In the mean time, she anticipates on the future action of placing the block on the button and she is in fact mixing thought and action when she is thinking of this action while already moving to pick up the block. The way in which thoughts originate from knowledge from prior actions, anticipate on future actions and are thought in-between actions reveals how close knit the virtualisations and actualisations during game play are. Game scholar Souvik Mukherjee's analysis the computer

game S.T.A.L.K.E.R. shows how an understanding of games as interplays of processes accounts for the variations in the possible ways to progress through the game (235-236).

To summarise, being aware that games involve processes of virtualisation and actualisation helps explain their open-endedness. During play, numerous possible actions are generated and can be chosen by the player that will each lead to new possibilities to pop up. Game space serves as input to these processes, both inspiring and constraining ways to act in the game. The processes at work can be described as happening simultaneous and as moving back and forth in the directions of the more concrete actual (which leads to actions) and in the direction of the more abstract virtual (which forms new possibilities).

#### *4.1.2 Changes*

Since actions are so closely connected to their preparations, it is almost impossible to see one game action as a loose event. The events they trigger are never fully reached but always stay in process because of their web of interconnectedness with other actualisations and surrounding virtualisations. An event in the game is not the result of an action as a starting point nor is the event it causes the end point. In fact, we should not really speak of events because this presumes a defined change in a measured range of time. Instead, what we saw happening in my example of *PORTAL* above is that after an action is executed by the player there is a constant movement towards events in the form of continuous changes in the game state. These changes are more like ongoing processes than outlined events.

Changes that are brought about by an action are irreversible (except when returning to earlier saved games) and unpredictable (at least partly because certain predictions can be made to enable players to form strategies). New reconfigurations do not resemble the initial input and cannot be made undone. When the player lets game character Chell fall down in muddy water in the game *portal*, it is impossible to undo this action except by leaving the game to reload an

earlier saved game. This option can also be seen as an actualisation because it is a decision that is carried out. It enables new virtualisations and actualisations in the reloaded game.

When the player instead decides to play on, she might find a spot where she can let Chell climb out of the water to return to the starting point to try to navigate around the water. It may then look as if the processes related to falling into the water are made undone because the starting point looks exactly the same but this appearance is deceptive. The game state is definitely changed by the previous events, for example by the time that has passed or damage that is done to Chell's health, even if these changes are not registered to be shown to the player in the game.

The changes that result from game actions are hard to predict. This is because virtualisations not only cover the processes that take place at the side of the player, but also at that of the machine. The surprising new states that may result from this interplay can be seen as original creations, supporting the view of the performative approach that players actively create space in interaction with the machine. When timing a take-off run and jump over the stretch of water in *PORTAL* the player cannot be sure that Chell reaches the other side even if the jump was timed exactly right. The machine namely generates outcomes on the basis of calculations that have a programmed element of randomness in them. Especially over a longer period of time this means that the outcome of one particular action can be very different at different play attempts of the same game because of the accumulative effect of multiple successive randomisations.

Illustrative of this game characteristic is Mukherjee's analyses of *S.T.A.L.K.E.R.* which demonstrates that entering one level at multiple tries lead to totally different game events (237). This phenomenon can occur even when a player starts with initial game states which are in principal exactly the same, for example when starting at the same saved game or starting the beginning of a game with the identical setup. Mukherjee's game analysis thus supports that the

understanding of the virtual as unpredictable and definitely changing processes fits well with the characteristics of games.

Understanding that the processes of virtualisation and actualisation during game play lack beginning and end states and bring about irreversible changes foregrounds an important element of computer games. What makes games entertaining to play and in fact constitutes them as games in the first place, is that their outcomes are relatively unpredictable and partly controllable by the player. Regarding games as constituted by the processes described here thus brings out important qualities of games and works well to analyse them.

#### *4.1.3 Multiplicities*

My conclusion that games consist of processes of virtualisation and actualisation and contain an element of contingency lead to the third aspect of my new terminology of the virtual: games are characterised by multiplicity. Multiplicity is present in games because of the freedom of the player to make her own choices leading to numerous possible paths through the game. The different actions and reactions that are enabled in the processes of virtualisation and actualisation lead to multiple possibilities. The process of virtualisations and actualisation can be located at the side of the player who carries out only some of the possible actions and in the machine that renders only some of the possible game states after contingent calculations.

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Multiplicity is formed by a correlation of repetition and difference. Actions, for example, have a repetitive side as they are structured by the possibilities a game affords (not everything can be done) and the goals of the player (strategic choices) and involves a lot of repetitive action to achieve these goals. This last element is what makes playing games for some players feel like just another day job as I expressed in the introduction to chapter one (Castronova “Synthetic Worlds”, 177). Space in *PORTAL* expresses an element of repetition by presenting numerous consecutive test rooms that are built up with the same stone floors, high ceilings, and standard

puzzle objects. The simplified images of objects and space that represent their real counterparts can be seen as a simplicity which leads to repetition (e.g. all wall panels looking the same).

In *PORTAL*, an endless amount of spatial puzzles is created with the same available game objects and physical principles of the portals. The amount of possibilities is again enlarged by the order in which the player carries out actions and their connected virtualisations and actualisations and her fitness and skills which allows her to carry out actions more or less quickly and precisely. Another element of simplification in games which creates differentiation is the substitution of complex physical movements with the pushing of buttons on the controller which leads to a repetition of the same buttons being pushed. The possibility to form different combinations and to play different games with one controller elicits a large variety of actions in the game. It encompasses virtualisations of the player's body which becomes capable of doing new things.

Repetition and difference are carefully weighted in game design to make a game playable. Parameters are the size and accessibility of landscape, availability of resources and enemies, and programmed constraints of the environment. In *PORTAL*, these determine the difficulty of the levels, because the bigger the test rooms and the more gaps to traverse and objects to collect or activate, the more challenging the level is. Also of influence are the player's strategy and skills (which may be insufficient), play environment (which may be distracting the player), and personal preferences (which may add a bigger challenge, e.g. when a player wants to play all *PORTAL* levels as fast as possible). The aim for game designers is to achieve "a generative balance between the open-endedness of contingencies and the reproducibility of conditions for action." (Malaby 106).

These interpretations indicate that multiplicity is formed through the interplay of repetition and difference. It also confirms my claim that games themselves cannot be called purely virtual in the sense that they do not contain endless potential but are limited by their

programmed code. Instead, they should be seen as encompassing processes of virtualisation and actualisation which produce a multiplicity of potential.

4.1.4 Rhizome

Understanding games as encompassing a multiplicity of possibilities, makes it hard to group games into game genres. PORTAL poses a problem of categorisation because it is played in first person and displays the game space from the perspective just behind a gun, making it logical to classify it as a shooter game but the game play shows more accordance with a puzzle game.

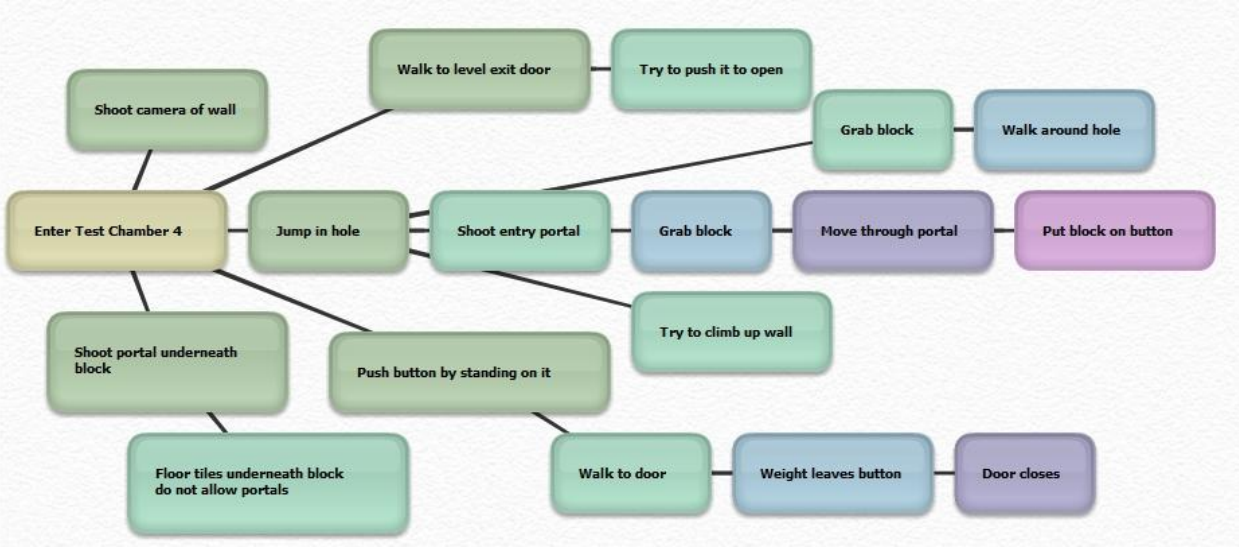


Figure 6: Limited display of possibilities of actions in their successive order.

Looking at the level of game play, I would like to note that multiplicity in games does not lead to a total chaos in which everything is possible and nothing is stable enough to be definitely named. Considering game play as made up of processes that create multiplicities through virtualisations and actualisations does not mean that there is no way to classify them at all. The multiplicity of possibilities in traversing game space can for instance perfectly be described as all the possible paths through the game. These could be drawn in an arborescent scheme in which the different paths resemble the branching nature of a tree (see Figure 6), which is a model that is often used





stable product but functions in the same processes of virtualisation and actualisation that characterise the game it describes. This means that you can imagine drawing in more connections and adding other virtualisations and actualisations. The rhizome presented here is thus not a definite, all-encompassing display but one that captures a gleam of some of the processes involved in game play.

As one game is different at each time it is played and for each player, it seems difficult to keep to one explanation of a game. Still, this is possible through the concept of abstraction as well. This requires abandoning the effort to register all the possible game paths on paper and to rely on the power of abstraction by drawing a simple rhizome like the one I have drawn above. This produces virtualisations and actualisations in all possible directions and in that manner contains all possible played games in totality by returning to simplicity.

According to Mukherjee, the reason that distinct paths through the game can still be grouped under the heading of one game is that for Deleuze “the multiple is characterized by univocity.” (230). He explains that one thing can carry various meanings that are “formally different” but still “ontologically the same” (231). This argumentation reflects my notion of how the abstract represents the overall game and allows virtualisations and actualisations in which different game paths or changed rules can be found.

Recapitulating, the new understanding of the term virtual that I propose, embraces the characteristic of games to contain both repetition and differences. Something that does not have to lead to trouble because the way in which these multiplicities come forward in multiple paths through a game can still be grasped by focussing on their abstract quality. By using a rhizome, different directions of game play can be displayed while respecting connections to other actions and thoughts, changes in order of actions and yet unaccounted for virtualisations and actualisations.

### *Sub-conclusion*

My above discussion of game play as involving processes of virtualisation and actualisation shows how interaction with a game produces multiplicity in games through processes of change which are irreversible and continuous. The idea that these changes are made when player and machine interact and that the new notions of space that are created are real makes the ontological understanding in the way I propose to use it for the research on games from interactive, embodying and performative approaches a very fruitful one. I will now go deeper into the ways that these processes of change come about, by looking into the place of affect in my terminology.

### **4.2 Affect and game play**

The reason that I want to add the notion of affect to my terminology of the virtual is that my above focus on processes risks the conclusion that it is quite similar to the understanding of the virtual that prevails in game studies at the moment. This entails the consideration of unreal representations from which players can construct their own interpretations. This process of interpretation could be compared by critics to my description of the player's mental work out of which actualisations emerge. However, these so-called mental processes are only one part of the term affect, the term that stands for the collection of movements and sensations that serve as energetic input for change. Affect includes feelings from our senses and emotions and those things we are not even conscious of feeling and thinking. The strong connection that this forms with the body and between interpretation (as one component of affect) and action is what makes my proposed understanding of the virtual so different. The affective component in the virtual is what makes the virtual real and what makes the space in the played game real. In the following paragraphs, I will set out how the specific embodied sensations that are associated with affect can come about while playing a computer game.

#### 4.2.1 Affect

To grasp the importance of affect during play in my proposition, I will now proceed with a description of game play of the game *PORTAL* to define what is so special about affect that it addresses the whole body and mind of the player and its environment instead of only consisting of interpretation. I will do so by adding four examples of affective processes to add to the mental processes I described in the previous sub-chapter. Note that the four processes I add would be associated to take part in the body of the player, while I locate the previously described processes in the mind of the player. I want to make clear that this divide is absolutely artificial and only relevant for the structuring of this text because affect covers all effects on the player irrespectively. Affect during game play is part of the processes of virtualisation and actualisation and all the examples I will describe can be seen as effects of actualisations and leading towards new virtualisations because affects lead to changes.

First, I will write about the ambiance and feel of space in the game. The atmosphere of the space in *PORTAL* is highly influenced by the look of the rooms in which the player has to solve the puzzles. The big rooms with smooth, clean and colourless surfaces give a sense of a very clinical setting which adds to the idea that the player takes part in an experiment. This idea is now and then confirmed by the voice-over by computer GLaDOS. The uncanny feel of the rooms is enforced by the high ceilings, the small amount of windows through which only small beams of golden sunlight comes in and the soft, pleasantly lid round shapes of the space at the end of each level which stands out against the appearance of the rooms themselves. These associations cannot but also be bodily felt by the player. Our body might react with feelings of fear or pain from the prospect by being hurt in this space of hard textures and surveillance. Geographer James Ash writes that when “being sensed by a viewer [...] images produce a literal kinaesthetic interpretation in the body. In viewing the image we can draw upon our embodied experience to feel [objects] proprioceptively” (7).

I would like to add that besides the suggestion that affects are produced by looking at the screen, affects can also perfectly be brought about by the sounds that games produce. This is the second affective process that I would like to discuss. In *PORTAL*, the guidance that the player receives from GLaDOS is not very comforting. First of all her computer voice is very monotone, effecting a detachment rather than identification because of lack of emotions. The moments when there is a change of pitch, this leads to a sense of agitation rather than friendliness. The computer namely stresses malicious effects of the testing by pronouncing negative words in a different pitch and alternating speed:

“Please be advised that a noticeable taste of *blood* is not part of any test *protocol*, but is an *unintended* side effect of the Aperture Science Material Emancipation Grid, which *may*, in *semi-rare cases*, emancipate dental fillings, crowns, tooth enamel and teeth.”

(Emphasis added, Test Chamber 2 of *PORTAL*).

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The third way in which affect is produced in this game is through the sense of speed. *PORTAL* like many racing games brings about a literally dizzying sense of speed by seeing the scenery fly by very fast. This is the case when momentum is created to traverse a gap by jumping down a distance to gather speed before falling into a portal and then flying out at the same increased speed. During this operation the direction of movement may change from vertical to horizontal when passing through a portal depending on their placement on walls, ceilings or floors. The acceleration that is reached together with the alternation of direction leads to a very confusing idea of space and direction, especially if multiple portals are entered in succession. The vertigo that is experienced in this situation can create nausea because there is a mismatch between what our eyes see and the balance our body registers (see Ihde 11).

Fourth, our body is affected by the exertion that is caused by playing the game. It tires our eyes and muscles to focus for a long time on the screen and carry out repetitive movements during which our muscles are tensed. In chapter two I already mentioned how an analogy can be drawn between firing a weapon, a portal gun in this case, and the bodily movement that is required to do this in the game by clicking the left or right mouse button of the mouse (Kirkpatrick 133-134).

The way in which affect can be situated in relation to the processes of virtualisation and actualisation during play can be illustrated in more depth with a discussion of images by Mukherjee. He claims that when looking at a moving image on a screen three things happen: First, the image needs to be perceived by the player for it to have any effect at all. Then, affect comes into play because the perception of the image leads to a number of changes in the body (including the mind) of the player. From these affects, one possibility is crystallised which will then be carried out as an action (Mukherjee 232-233).<sup>21</sup> In this description, I see the second stage in which affects are produced as a moment where the actualised screen image effects processes of virtualisation. These lead to multiple possibilities out of which one is chosen and acted out by the player. While Mukherjee thereby provides a good base for understanding the details of how actualisations lead to virtualisations, I want to stress that it is necessary realise that in fact all these stages happen at the same time. In his illustration, they are isolated instances of processes that in fact move back and forth and attract an uncountable number of thoughts, associations and actions.

My discussion of affect points out how space in games can only exist by grace of the interaction with the game, the perception through the senses and all the corporeal and mental

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<sup>21</sup> The discussion of the perception-image, affection-image and action-image as all belonging to the movement-image by Mukherjee is a reaction on Alexander Galloway's use of these concepts to describe games as a medium of actions (read more in Galloways book *Gaming, Essays on Algorithmic Culture*, 2006). Originally, these terms were not designed to describe the computer game image because they were used by Deleuze to write about cinema (see *Cinema 1. The Movement-Image*, 1986).

processes that happen as a result in the player's body. Moreover, affect is part of the processes of virtualisation and actualisation during play as it can be seen as an ongoing reaction on changes in the machine and the environment and serves as fuel for new processes of virtualisation and actualisation.

#### *4.2.2 Navigation*

I will now illustrate how an understanding of affect can be used to analyse game space by giving a more thorough description of how space is created by the player while exploring the game field. I explained in chapter two that the total space of the game is rarely presented at once to the player and even if there is a map of the field available then it still takes effort to learn about specific places on the map. Sometimes the game space cannot even be presented on a two-dimensional map because it does not follow the rules of Euclidean geometry (Ryan "Cyberspace", no pagination). Space in games can therefore best not be measured in distance but through events which favours the experience of space through affect over the scientific system to measure distances.

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The space in Test Chamber 4 in *PORTAL* could be measured by establishing an estimate of the size of the floor tiles based on the size of player character Chell and then using that to measure the whole room.<sup>22</sup> This works fine in an approach that focuses on the representational aspects of the game and allows judgements towards the quality of the game as a simulation of real space but this type of analysis remains on the level of objective space and cannot take into account the shaping of place into space that happens through interaction with the game.

Rather, the study of affects requires a focus on the creation of space. Space is created in level four of *PORTAL* when the player walks from the entry of the room and passes an exit portal

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<sup>22</sup> Players discuss the size of the total play field of their favourite MMORPG in online forums and use character sizes and speeds which are compared to real world measures to give an estimate size of the game's space. See for an example the weblog on the size of Azeroth in *WORLD OF WARCRAFT* ("Gnome on the Range.") and the forum post on the size of the game world of *AGE OF CONAN* ("Let's Calculate How Big the Game World is!").

and the button that opens the door which instructs the player to go and look for a block that can be placed on it to push the button down. When the player signals the block at the floor of a deeper lying place, she forms the idea that this hole can be entered but that the exit route is not the same (this would be climbing out). Instead, the player's exits the hole through an entry portal in the floor that can be created with the portal gun and which leads out of the exit portal that was signalled in the wall. This would normally be a rather illogical path through space because the horizontal floor of the hole is connected with the vertical wall a short distance away but it is meaningful when playing this game. Furthermore, the player only focuses on the areas of the space that are important to solve the puzzle in this Test Chamber. This means that its architecture is not seen in distances in meters to be traversed but through the tactics of the player which is formed by her knowledge of the game and her strategy to solve the puzzles.

Apart from shaping the space and the understanding of it, affect should also be understood to stimulate movement in space. Ash argues that game space gets its shape through movement of the player that is stimulated by "events that push and pull between specific spatial points" (11). Accepting that space can bring about such forces becomes easier if this statement is placed in the context of virtualisation and actualisation. A certain actualisation of space elicits virtualisations in the form of ideas about what areas are worth visiting or could better be avoided. The player takes a decision for action based on these and can then be said to have been pushed or pulled in a certain direction.

To close my explanation of the role of affect during the exploration of space, I want to stress that the addition of the notion of affect to my terminology of the virtual makes clear that space in games is not just programmed and entered by the player but in a large part shaped by the player. The space only shows itself to the player when certain parts are reached and can best be described and measured through the experience that the player has in it during her play. This idea of the shaping of space during play is very usable by researchers who look at space from a

performative approach because the notion of the shaping of space is very similar to its premise of the creation of space.

#### 4.2.3 Boundaries

As a last addition to my terminology, I wish to establish how it includes the breaking of supposed boundaries. I write *supposed* boundaries because these should be understood as artificial restrictions that do not reflect ontological reality.

The boundary that had to be broken to use the notion of affect in this sub-chapter was that between body and mind. Instead of referring solely to processes in the body, affect also encloses mental processes. Better said, the notion of affect demonstrates that these processes cannot be assigned to separate locations and that in fact there is no divide between body and mind.

My discussion of game play as comprising processes of virtualisation and actualisation reveals that the player takes part in these processes by interacting with the game in a way that allows for multiple possible actions. Multiple possibilities can only be formed when there is a deeply intertwined relation between the reactions of the machine, her own reactions to game events, the rules of the game, her own strategies, and the environment in which she plays. The processes of virtualisation and actualisation cannot be compared to the interaction that takes place between player and machine in the theory of the feedback loop. They namely not only connect the different elements but also melt them together. The movements in the directions of virtual and actual are thus of major importance. They are what constitutes reality. The entities player, machine and game are only constructed as overlaying classifications later and should not receive primary importance in research.

For the same reason, it is impossible to formalise game space as being either virtual or real and game elements as either virtual or actual. My exemplification of the processes at work



while playing the game *PORTAL* shows how space and objects in the game are part of movements towards the virtual and the actual that have an ontological status of reality. The space in this game and the actions of the player within it have both real and virtual qualities at the same time.

There is thus a breaking of boundaries between elements that are normally thought to be apart in game studies. This shows how my terminology enables to study games in a way that is moving beyond limiting categorisations and dichotomies.

### *Sub-conclusion*

Recapitulating what I have done in this sub-chapter, I should say that by including affect it becomes clear that studying space in games as virtual in the way I propose is truly different from the way games are generally studied at the moment. Game play does not only involve processes of interpretation but also bodily effects on the body. I showed that since affect is connected to processes of virtualisation and actualisation, game space is not a given but something that is produced in relation to the player and her surroundings (including knowledge, skills and strategies) and the machine. This does not put the player central but instead blurs the difference between the virtual and the real, computer and player, and body and mind.

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### **Chapter conclusion**

In this chapter, I answered how a new terminology of the virtual be constructed. Fulfilling the need that I observed, I formulated a terminology that can be used to study game space from approaches that look at the interactivity, embodiment and performativity of games.

The real quality of the virtual that was required comes forward in the description of reality as foremost consisting of movements between the virtual and actual. Looking at the value for the embodiment approach, virtualisations do not portray a move away from existence but are intrinsically connected to it. The body can for example be seen to acquire new possibilities

through engaging with controllers which is an action that leads to virtualisations that might cause unforeseen game actions. Also, affects in the form of thoughts and feelings are very bodily examples of the processes of virtualisation and actualisation.

The terminology I constructed enables current researchers that focus on interactivity and embodiment to truly depart from preliminary ideas that games are representations that belong to approaches that they object to. It does this by offering a way to perceive the game elements player, machine and game as fused together in processes of virtualisation and actualisation. There is thus no longer a gap between player and game that has to be bridged through theories of interpretation or feedback loops.

Finally, my proposition does justice to the unique characteristics of games that were advocated by the ludologists in the debate that formed game studies. I grounded the medium specificity of games by establishing that game play is made up of processes of virtualisation and actualisation that can only take place when the game is played. Furthermore, this emphasis on processes in the terminology allows research on the open-endedness of games, the irreversible nature of changes they present, and their unpredictability. It also establishes that their multiplicity is limited by their programmed code which balances repetitive and differing elements in games. I showed that the interplay between player, machine, game and game environment with these qualities can perfectly account for the creative element of play that is stressed in the performative approach. The model of the rhizome offers a way to track the ever-changing nature of games that results from the specific game characteristics.

The demonstration that all the requirements are met in these three areas answers why this new terminology can be used to successfully approach games as interactive, embodying and performative medium.

## Conclusion

The research in this thesis was inspired by my wondering about the correctness of the opposition between virtual and real. I started out by sketching the perfect holiday destination which combined snowy mountains with an enjoyable sea side and several fine islands in front of the coast, soon to disappoint you as reader by announcing that this vacation spot was out of reach because it was virtual and thus not real. I established that the term virtual is used by laymen and game scholars alike to describe computer games in a way that qualifies them as being unreal because they exist in a digital medium which is non-physical and thus cannot be touched or visited. The contrast that is thereby made with reality is what attaches the negative connotation of 'fake' to the virtual.

By looking at the history of virtual reality, I was able to answer why the term virtual is used in the meaning of unreal in chapter one. I identified an origin of the use of the virtual with the attributes described above in the popularity of VR-technology from the sixties onwards. Three characteristics of the virtual that were established in this period, the virtual as unreal reflection, as very close to the real, and as eliciting real effects, recur in writings of game scholars. They surface in descriptions of games in which these three definitions are used in proximity of the term virtual. Also, specific game studies terms like make-believe, the magic circle and immersion are utilised which all reflect the meaning of the virtual that arose from the virtual reality craze.

In chapter two, I inquired the usefulness of the notion of the virtual as unreal to research space in games. I discovered that although the use of the meaning unreal seems to work well for the research of games as representations or maps, it falls short to do justice in approaches to game space that involve the study of interaction, embodiment and performativity. These

approaches point out that the engagement with the game is a very real phenomenon which explains why games are signalled to be almost real and are able to produce real effects.

The observation that the meaning of unreal still surfaces in game literature that focuses on interactivity and embodiment indicates the crucial necessity for a different terminology. It namely weakens the standpoint of these researchers that games have to be studied respecting their medium specificity which was uttered in the narratology/ludology debate. While basing their research on a reaction against the first two approaches, their methods regard games as simulations which reflects the idea that game space is made up of representations. A terminology is therefore needed that grounds the real nature of the virtual and enforces the convergence of player and machine in a way that does not involve theories of representation. The necessity for a new terminology is confirmed when looking at the latest approach which focuses on game play as a performative practice that creates spatial realities. I argued that this performative approach especially needs an understanding of the virtual that pays attention to the specific characteristics of games since its methods originate from the area of geography.

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Having determined that the term virtual in its use with the meaning of unreal no longer matches the understanding of space in games as real in its more recent approaches, I turned to an investigation to answer what requirements a new terminology should meet in chapter three. I looked into alternative meanings of the term to see if they could account for this approach of space in games and found the notion of the virtual as potential in the area of philosophy. Looking into the utilisation of this theory by media scholar Lévy revealed requirements that reflected the medium specificity of games and hinted at its use to define the virtual as real. However, an examination of the development of science revealed connections to epistemological methods that are also wrongly used by researchers of interactivity and embodiment. I discovered that for the new terminology to be able to account for the reality of the virtual and convergence of elements involved in game play, an ontological basis is required.

A discussion of the ontological characterised work of philosopher Deleuze revealed useful insights in aspects as reality, classification, and affect.

The requirements that I set out provided a basis for my development of a new terminology of the virtual in chapter four to answer how one should be constructed. I formulated an understanding of game play as made up of the processes of virtualisation and actualisation of which reality consists. This affirms the real characteristic of game space which is grounded in more depth by my clarification of the notion affect as encompassing all thoughts and feelings of the player to be part of the continuous processes. I argued that games cannot be analysed by dividing their elements into different parts because this dynamic view of reality disqualifies such artificial classifications. The focus on reality and convergence provides exactly what the approaches of interactivity and embodiment lack at the moment.

The ability to account for the medium specificity of games, which I indicated to be valuable especially for the approach of performativity, comes forward in the understanding that the processes of virtualisation and actualisation only come forward once the game is played. Moreover, they are very efficient in describing the open-ended and unpredictable quality of games and the irreversible characteristic of changes they present. Changes are formed in interplay of virtualisations and actualisations in-between player and machine and account for the creative production of space that this approach has as its focus. This demonstrates that this new terminology of the virtual has what it takes to benefit the three more recent approaches to game space.

A problem that still needs to be solved in this respect is that the use of the same word with a different meaning could lead to a lot of obscurity about which notion of the virtual is used. I prefer to refrain from the creation of a synonym to distinguish between the two, because this would be an artificial intervention that would not take away all the confusion. This would entail that one of the notions of the virtual is cut off its origins as both uses of the term have

been around for multiple centuries. Also, the disambiguation would get rid of the powerful capacity of the virtual to refer to contrasting concepts. The advantage of refusing this disambiguation is that it allows for the statement that space in games is created by the player in relation to the medium and is thereby real but nevertheless different from real space that is experienced outside the game because it is digital and mediated. The latter demonstrates that the virtual in the meaning of unreal should not be completely dismissed, because this would throw out the whole legacy of the field of optics and virtual reality.

To investigate further the difference between real space and game space, future research can be done focussing on space in pervasive games. An analysis of the correlation between the two modes of space in this hybrid form could provide interesting insights which may lead to concretise the terminology of the virtual I constructed. Chances lie in the inquiry into the reality and virtuality of real space in these games after my establishment of the real character of virtual space.

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I would like to advise that scholars who focus on performativity in games, and its precursory approaches of interactivity and embodiment, use the alternative terminology of the virtual that I formulated and explicitly clarify this background of their writing. This means that they should not use synonyms as fake, unreal or make-believe, or theories of representation or the feedback loop to research game space, but instead make clear that they refer to the virtual as a process that creates possibilities in correlation with actualisations that lead to movement towards concrete outcomes. They will then make use of the real potential of the virtual to describe game space.

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