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Storyplaying

Narrating Futures

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Agency and Narrative in Video Games

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Content

1 Introduction: What is Storyplaying?

This study is to be understood as part of a larger research into a specific type of narrative that is termed *future narrative* (FN). The general features of this type of narrative are discussed extensively in Christoph Bode's *Future Narratives: Theory, Poetics, and Media-Historical Moment*. Since his is the foundational theoretical work, I will quote at some length from his definition of FNs:

> 'Narrating Futures' is about a new, hitherto unidentified kind of narrative. The fact of its discovery is exciting in itself, but no less exciting is the key feature this new kind of narrative displays: it does not only *thematise* openness, indeterminacy, virtuality, and the idea that every 'now' contains a multitude of possible continuations. No, it goes beyond this by actually *staging* the fact that the future is a space of yet unrealised potentiality – and by allowing the reader/player to enter situations that fork into different branches and to actually *experience* that 'what happens next' may well depend upon us, upon our decisions, our actions, our values and motivations.
>
> It might therefore be said that these narratives *preserve and contain* what can be regarded as defining features of future time, namely that it is yet undecided, open, and multiple, and that it has not yet crystallised into actuality. It is by virtue of their capability to do exactly this – to preserve the future *as future* – that these narratives are here called 'Future Narratives'.

Bode goes on to define what distinguishes FNs structurally from others, which are also called 'past narratives', and which are organized around events:

> Future Narratives do not operate with 'events' as their minimal units. Rather, their minimal unit is at least one situation that allows for more than one continuation. We call this a 'nodal situation', or a 'node', for short. (1.1)

The node is the defining feature of FNs. Consequently any narrative that contains at least one node can be called a FN. But in how far can a situation be described as nodal, and a nodal situation be described as narrative? Well, as the definition says, a situation is nodal if it allows for more than one continuation, which means that the two continuations that are both *possible* from one point have to be *different* from each other. The state after the node can only be one or the other, not both at the same time, they are mutually exclusive. And yet, from the nodal situation, each of these mutually exclusive states is possible to be actualised. Whereas all narratives can *talk* about potentiality, openness or indeterminacy, these aspects are actually *present* in a nodal situation, they are staged by the structure of the narrative.

And how is such a situation related to narrative? Precisely through what the 'mutually exclusive' refers to: the state of a storyworld. Nodal situations are part of a narrative experience by the user. Nodes are a feature that can be *added* to any kind of narrative. In order not to exclude any of the manifestations of FNs, the definition of narrative used here is a rather encompassing one that is strongly influenced by cognitive narratology. Narrative is here being understood as anything that is conducive to the user's mental linking of (at least) two events and the creation of a storyworld. Such a definition overcomes the shortcomings of essentialist attempts at pinpointing what a narrative 'is', in the sense of distinguishing concrete features in an artefact, be it a text, an image, or any other sign. It is less about what a narrative *is*, and more about what *can be* a narrative to a recipient.

So nodes in a FN are part of a structure that lends itself to being regarded as a narrative by its user. The user is invited to mentally link at least two events and thereby start the creation of a narrative and a storyworld in which the events take place. And in addition to that, the node provides a situation in which at least *two different changes to this storyworld* are possible. This definition is highly abstract and therefore neutral on a number of aspects that can and will influence the way that FNs are created, presented, and experienced. Chief among those aspects is the medium used. In addition to the general investigation that also looks into the historical background of concepts of openness and indeterminacy, the larger project of analysing FNs also contains a number of studies that look at the occurrence and forms of FNs in different media.

This study will focus on FNs as they appear in gameplay in general and video games in particular. The existence of nodes turns any narrative into a game of sorts between the creator and the user, it heightens the ludic quality of the narrative by either directly granting the user agency (as in a Choose-Your-Own-Adventure [CYOA] book or a combinatorial book like B.S. Johnson's *The Unfortunates*) or at least by forcing the user to make differential evaluations of multiple continuations (as in sequentially arranged multiple endings – here the reader needs to position herself evaluatively, and choose which ending to prioritise). But many of those FNs use medial forms of PNs (a book, a movie) as their structural starting point and 'gamify' them through the inclusion of nodes. The following analysis will concentrate instead on those FNs that take a game structure as their starting point, and make this structure readable as a narrative.

It is the guiding assumption of this study that some games, and especially many video games, are also FNs. Therefore, it will mainly attempt to show two things: how video games can be experienced by their players as narrative, and how this narrative, through its connection to gameplay (which necessarily introduces nodes), can enable the openness that is a precondition for their inclusion into the category of FNs. There will be a more in-depth discussion of this point,

but for introductory purposes, it should be said that this study has a very specific focus within the range of things that can and should be said about video games. This focus is on the perception of the play experience as having meaning in a fictional storyworld. Such a perception, it will be argued, is not necessary for games, but it is well possible and productive.[1] This focus will therefore exclude attempts to explain what video games (or any games) 'are', just as it will not posit what narrative 'is'. Some things are played as games, and some things are read as narrative, and sometimes, a thing is both. The latter is what is called *storyplaying*.

What most clearly distinguishes video games from other medial realizations of FNs is the range of agency that they allow their readers. This is why we will refer to the user of a video game in the following as a player, even though this player in many cases will also have to be understood as a reader of fictional meaning, a reader of signs and implied or explicit narratives. But it is a core feature of video games that the player almost never (and never completely)[2] stops to be an agent, and is therefore 'playing' the story to a much larger extent than in any other medium.

The basic definition of a nodal situation is also neutral on the question of whether the user is allowed to influence which of the continuations is going to be realised. Such an empowerment of the user to the status of active agent is indeed not necessary for a situation to be counted as nodal. The FN might make the choice for the user, like a croupier spinning the Roulette wheel (or a hypertext that automatically selects one of several links without any input by the user); or it might present all of the continuations, as in the case of sequentially presented multiple endings (for example *The French Lieutenant's Woman* in print or *Run Lola Run* in movie form). But nodal situations that do involve choice form a very important sub-group, and they are highly prominent in video games. A major focus will therefore be on a close analysis of player choices and their relation to the game's narrative perception.

The appeal of games lies in their promise of agency, in the promise of an openness that is dependent on the player and her choices. All games are therefore necessarily non-unilinear, since true agency implies choice, and choice implies differing outcomes. Many games of the category that Jesper Juul has called 'emergent' offer a staggering degree of openness or game complexity, one that is impossible to achieve in other media like print or motion pictures. So are video games by default the 'best' FNs, allowing for the highest degree of openness? The best

1 For investigations into the nature of games and play, cf. Huizinga, Caillois, and Sutton-Smith.
2 Though there might be situations in a video game where the player has no agency (like loading screens or non-interactive video sequences), a game that consists entirely of such situations would not be considered a game.

answer would most likely be a tentative yes with strong qualifications. Video games are unique among games in a number of ways, two of which are of special importance for their analysis as FNs: Their enormous potential for presenting their rule structure in terms of a fictional storyworld, and their capabilities of creating a succession of game spaces. Both aspects will be dealt with in more detail in later chapters, and will only be sketched here for a better understanding of the way that this study is organised.

The video game is a meta-medium in the sense that its underlying technology allows the non-reductive incorporation of all other major presentational media: spoken text, written text, as well as all kinds of sounds and images, both still and moving. Neither a written text nor a movie clip is lessened in their medial form by being part of a video game, which means that video games can employ their expressive potential to the full. Though they do not need to, if they want, they can tell a story as well as a movie or a text – simply by presenting a movie or a text. It is hardly surprising that this potential for narrative presentation has been consistently tapped by video games, from early text adventures to big-budget cinematic productions. Games produced on a large scale can now contain hundreds of pages of text and hours of video sequences. Storytelling is easy for video games to *include*, though it is much harder for them to *integrate*. There will be much more on this integration in the following (chapter 1.1); here we will just highlight one feature of video games that makes integration easier than for many other, non-digital types of games.

Traditionally, games are set in a clearly defined and rather limited game space – for example the board of a board game, the playing field of a sports game, or a sandbox. This game space is almost never modified during a single run, or only in a limited way, such as the switch of sides in volley ball after half-time. Other than that, players rarely if ever switch or modify fields or boards. This is changed radically by video games, because one of the things they excel in is the creation of a large number of different game spaces and the ease with which the player – through the use of a player character as a spatial stand-in for the player – can change between different game spaces. Switching from one level to the next is so much less of an effort than changing a physical board, not to mention walking to a different playing field. This has consequences for the structure that video games allow, and for the relative dominance of what Juul calls 'games of progression'. According to Juul, games of progression "directly set up each consecutive challenge in a game" (67), by which he means that the sequence of challenges is fixed, even though the sequence of possible actions is not. We will return to this point later, for now it is enough to state that video games are exceptional in their ability to provide a fixed series of challenges within one run of a game and still remain interesting to players. They achieve this by creating a large and variable

number of successive playing fields, which means that challenges remain interesting even though the basic rules remain the same. And they motivate the player to embrace the progression from one field/level/room to the next by presenting it as a narrative sequence. Without at least one of these two methods – variation in playing fields and narrative sequencing – the player would experience games of progression as repetition and would soon loose motivation to play.[3]

These two aspects have been highly influential for the development of video games and for some important strains of their generic differentiation. They are also responsible for the fact that many video games are much less non-unilinear than most traditional, non-digital games. That this relative uni-linearity regularly goes hand in hand with an increase in the game's narrative proclivity[4] is not a coincidence. As conveyors of narrative, video games constantly negotiate between the openness necessary for agency, and narrative demands for some form of closure. The range between these two poles is where they are to be understood as FNs. In consequence, video games can be highly non-unilinear, but they need not be. Careful differentiation is necessary to understand the full range from uni-linearity to non-unilinearity that video games can offer their players, especially when considering what the player experiences as narratively relevant.

3 For an illustration of this we might look at the current trend of selling additional content for a game that a player has already bought, a trend that has become widespread with the establishment of digital distribution. The overwhelming majority of such downloadable content (DLC) belongs to one or both of the following categories: new game spaces or new narratives that are associated with the old game spaces.

4 The term narrative proclivity is here used in a sense similar, but not identical to Marie-Laure Ryan's term 'narrativity'. Narrative proclivity is not something that an object 'has' or does not have, but a measure of the relative ease with which an object lends itself to being conceived in terms of a (fictional) storyworld. This says nothing about the complexity of the storyworld, nor does it imply any aesthetic judgment. On the contrary, many a modernist aesthetic position would rather privilege an object in which less narrative information is spelled out for the recipient. Also, narrative proclivity as a term is used here not to make a theoretical statement about events and their fundamental ability of being conceived as a narrative, but merely as a practical measurement. As Christoph Bode has stated convincingly, *any* two events can be narrativized. Thus, narrative proclivity, as it is used here, is not a question of 'yes' or 'no', but of 'how easily'? As such, it is very helpful in distinguishing between, for example, the material offered for narrativization in *Space Invaders* (where the player has not much more than a few half-abstract shapes to go by) with that of *Fallout 3* with its use of highly rendered graphics, cinematic expositions, voice acting, and embedded texts.

1.1 Preliminaries: Medial Forms

As a preliminary consideration, we should try to locate video games as a medium with regard to the way they can be used. Video games are most commonly categorised as 'interactive' and grouped with all other media that are so designated. Yet this categorization precludes the possibility to account for some of the specific affordances[5] of video games as a medium although they are of major importance to the way they can engage the player in a reception process that is both open and susceptible to semantic charging.[6]

The first differentiation that one needs to make is related to the ways in which a user is *allowed* to use an artifact. Different media have different sets of rules for how to properly use them. These rules are often not absolutely binding, but are implicit suggestions. The rules for using a codex book run somewhat like this: Start reading at the first page, when you have read the first page, turn to the next; repeat this process until the last page. Of course I am *able* to start reading a novel from the middle, and I can easily skip pages or return to the beginning, but I *know* that I am not following the rules. In this sense, the rules of what we will call passive media do *not* allow or enable action by the user to change their perceptible form *in more than one way*. That is to say: two different kinds of input cannot lead to two different forms of presentation. In this sense, passive media usually have only a single option for right usage. Following this rule will always lead to the same palpable result. Two different, albeit 'correct' uses of a 'passive' novel or movie for instance cannot differ in what is being presented to the user. Note that this does not preclude the 'text' in any way from having nodes, but that, in case of a node, the different continuations cannot be *chosen* by the user. In an actively nodal book, such as a Choose-Your-Own Adventure novel, the player is offered alternative options for correct usage (you can go to page 12 *or* you can go to page 34) and, depending on the user's choice, the presentation will differ. This is also true for combinatorial printed texts like B.S. Johnson's *The Unfortunates* or Raymond Queneau's *Cent mille milliards de poèmes*.

Besides this distinction between actively-nodal and passive media (whether nodal or not), I would therefore like to suggest a further distinction between what

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5 An affordance is a quality of an object, or an environment, which allows an individual to perform an action. For example, a knob affords twisting, and perhaps pushing, while a cord affords pulling. The term is used in a variety of fields: perceptual psychology, cognitive psychology, environmental psychology, industrial design, human–computer interaction, interaction design, instructional design and artificial intelligence.

6 Interactivity is a notoriously difficult concept to define, and there are many ways to approach it. Since the following is not an attempt to theorize interactivity, I will only direct the reader's attention here to Christoph Bode's discussion of the term in 1.13.

one could call *static* and *dynamic* media. Static media are marked by the fact that their reception does not have a temporal dimension in itself. This means that *temporality and movement can only enter through the activity of the user*. A book is in this sense a static medium. Here temporality is dependent on the concrete user (the actual time taken for reading) just as is movement (in this case: the turning of the pages). The reception of dynamic media, on the other hand, does have a temporal dimension that is at least partially *independent* of the user. A film will take the same time to watch independently of who watches it.[7] A game of fast chess will leave the player a concrete amount of time for making a move, or for all moves together. Dynamic media are perceived as movement in time, a movement that is not initiated by the user as part of the reception process (the activity, for example, of starting the movie is to be considered as outside of the reception process proper). Dynamic media therefore also include the medium's ability to actively generate processes.[8]

The important point to note is that the aspects passive, dynamic, actively nodal and static can be freely combined, leading to four different medial forms. Thus, not every static medium is necessarily passive, just as not every dynamic medium is necessarily actively nodal:

	Passive	**Actively nodal**
Static	Book, Painting	Card game, board game, CYOA-book, combinatorial book, 'static' hypertext
Dynamic	Film, Music	Video game, hypertext with timed choice, games involving the laws of physics, interactive music[9]

Fig. 1: Medial forms.

In this sense, static-actively nodal media are those that *can* change their perceptible form in more than one (a nodal) way, but only in a way that is completely dependent on a user's input. A physical chess board with wooden pieces or a printed CYOA-book are static-actively nodal media in this sense. Though they do allow interaction, a reconfiguration of their presented shape, nothing will ever

7 With interactive media like DVDs, viewers can influence the time of watching by slowing or speeding up the presentation, though one might argue that this is a case of non-proper usage.

8 Aarseth refers to this difference in his distinction between transient and intransient texts, though he limits this to the way that text is presented to the reader (1997, 63).

9 This is a very recent development mostly encouraged by touch-based electronic devices, notably by Björk's 2011 album Biophilia.

happen to the board or the book unless a user *does* something.[10] And dynamic-passive media are those that have a temporal dimension that is independent of the user, such as music. In passive media (static or dynamic) nothing that happens is a consequence of an act by the user. In static-actively nodal media, nothing can happen that is *not* a consequence of an act by the user.[11] In dynamic-actively nodal media, things can happen *either* as a consequence of an act by the user, *or* as independent of her agency.

Dynamic-actively nodal media combine user agency (the user can transform the perceptible form through input) with activity (the medium changes in the user's real time but without her influence). Video games are likely the most advanced examples of this type of medium, but they are definitely not the only ones. Other electronic media, even when not classified as 'games', fall under this category, like hypertexts that have a temporal dimension (e.g. giving the player a restricted time to make decisions before random links are activated) or introduce state changes unconnected to the user's actions. But also non-electronic games that use physical properties with a temporal dimension and all games that contain a human as part of the game system (taking over the function of referee or gamemaster[12]) can be regarded as dynamic actively nodal media. Obviously, all multi-player games either fall squarely within this category or should be completely excluded from this typology.[13]

Most of the distinctions that result from this classification are already very common in media analysis, namely the opposition of static-passive and dynamic-passive to static-actively nodal and dynamic-actively nodal and the distinction between static-passive and dynamic-passive, usually referred to in terms of spatial or temporal medial forms (e.g. Ryan, *Narrative across Media* 21). The part that is important for this analysis is the distinction that has not yet been made

10 That is why a physical chess board or a printed CYOA-book cannot really be called 'interactive' media in the sense proposed by Bode: there is no *inter*action, because the only 'response' they show (the semblance of a response being essential for the definition of 'interactivity'), is identical with what the user just did to the medium. True, there is a change of aspect, but if such a change of aspect, solely caused by the user, were a sufficient criterion for interactivity, then all media would be 'interactive' – which would render the term useless.

11 It would seem that the narrative text that precedes the first player decision in a CYOA-book contradicts this, though one could argue that the book is, before the first decision offered to the player, in form essentially a passive medium that is then being changed into an actively nodal one.

12 The gamemaster is the auctorial instance that gives the player a goal (usually involving gameplay actions).

13 A borderline case would be the dice: throwing the dice is dependent on the user, but the ensuing physical motion is, through its chaotic nature, completely divested from the user's will, and is at least experienced as an activity by the game system.

sufficiently clear in media analysis between static-actively nodal and dynamic-actively nodal. This distinction has large functional consequences when one is looking at the way that games can relate the player and the game's rule-system. Dynamic-actively nodal media can do two things that other, non-dynamic media can't: enforce the rules by which they are to be engaged, and initiate processes that are unrelated to the user's input, but that can still be 'intercepted' by the player. That is why only dynamic-actively nodal media can create successful single-player games that do not rely on the player's cognitive limitations.[14]

The fact that dynamic media can enforce their own rules of use also means that they do not need to provide complete information about the rules to the user. Static media cannot be used without full information about how they are to be used. Without the knowledge that a book needs to be opened, one cannot read it. Now, this 'rule' is obviously excessively simple and is generally learned by children as young as one year, so that it is hard to imagine not knowing it. But what about playing chess properly, without knowing its rules? It is simply not possible. But if this game system is communicated through a dynamic medium (as in a chess computer), the player can try out moves and be told by the system whether they are possible or not.[15]

What this means is that dynamic media can transpose the information about their rules from the level of self-reflexive commentary to the level of the display of the gameworld. A CYOA-book, for example, can state the player's options in terms of the gameworld ('Do you want to enter the cave or not?') but needs to include instructions that directly refer to the game *as game*, to its rules ('If yes then *go to page 112*'). This is important for the narrative proclivity of games, because it makes a fusing of the game's presentational level (that contains its fictional content) and its rule-structure possible. It is also important for the types of choices that can be presented to the player and the information that the player gets about choices. All of this will be addressed in the main analysis.

14 This latter category would include games that challenge the player to know something, either out of the pool of general human knowledge (such as crossword-puzzles or questionnaires) or about a logical situation that she could theoretically be able to figure out but does not because of its complexity (peg solitaire, patience).

15 Note that playing a game of chess with someone explaining the rules while playing would mean that this person is included within the game system, which means that it turns into a dynamic-actively nodal one.

1.2 Preliminaries: Exclusions

To conclude this introduction, a few words are necessary on what this study is and what it is not about. This is not a history of video games. Examples from actual video games are chosen mainly for the fact that a certain feature or structure is employed by them in an interesting or exemplary or problematic way, not necessarily because the game was the historically first to introduce this feature. This study is interested much less in the genealogy of games than in their structure, potential, and development. Thus, the latest use of a gameplay mechanic or other feature might be the most evolved (though this is not always the case), even though the originality in creating it belongs to an earlier game. Storyplaying is only in its early stages and it will continue to evolve. Consequently, this study excludes a historically oriented diachronic perspective, though there will be some thoughts on possible future developments in the final chapter.

Also, this study is about game systems as created and fixed objects and their interrelation with users, here called players. In the case of video games, these systems are actively nodal and dynamic, but they are also fixed in the sense that every structure that I will talk about was created in its entirety before it is being performed by a user. Their actively nodal nature is limited by the designer's abilities to provide a set of options and possible reactions to player input. Their dynamic range is limited by technological affordances, especially the current state of artificial intelligence. This state is still a quantum leap away from anything we would accept as approaching human intelligence (or even the intelligence of most simple life forms), and it is therefore obvious that one has to carefully distinguish between game systems as created objects and any case in which even part of the game system is constituted by a human agent. These latter cases are structurally as different from 'normal' single-player video games as they in turn are different from a chess set, or, in other words, games that contain human agency as part of their game system are as different from games that do not as oral storytelling is from a written text. Since this is not a study about Calvinball,[16] it will therefore not consider games that either have a human agent as part of the game system, involve face-to-face oral communication with a human agent (even if mediated through chat, email, or the phone), or that involve more than one player. When a game system contains a human agent as one of its parts, theoretically everything is possible that is humanly thinkable. Many of the existing cases – from children playing 'cowboys and Indians' through pen-and-paper role-playing games with

16 Calvinball is a game that is played by fictional six-year-old Calvin and his imaginary tiger Hobbes, created by Bill Watterson, in which the only rule is that "You may not play Calvinball the same way twice", which means that rules are constantly being made up on the spot.

their human gamemasters to Jason Rohrer's experimental video game *Sleep is Death* – have developed rules to limit the freedom of agency that the human participant has, and yet even in the most limited cases, the number of options is still indefinite and an unambiguous formulation of game rules practically impossible. Humans are psychological subjects, and as such they do not necessarily follow the same strict logic that game rules do. The chess rules are unambiguous, as is the determination of a chess computer to win against his human opponent. But the human player can choose *how* she wants to play the game, can add or modify rules, even without breaking the existing ones. With humans, it is fairly impossible to say what game they are actually playing: are two persons, say grandfather and grandchild sitting at a board game, really playing the same game?

This is also the reason why player psychology will play no part in this study even though the focus will often be on the perception of the game by the player. Rather, it will focus on the structure of video games as rule-bound systems and medial presentations, and on the affordances that this structure offers to players. It does not posit real players, but rather players that are implied by the structure. While this book is interested in the range of options that games offer to their players, it is not concerned with what empirical players will choose to do in a given situation. The purpose of a game of chess is to win against an opponent; therefore, the player that is implied in the game's structure is one that wants to win. There might be countless real players out there in the world who have good personal reasons for playing chess and not wanting to win, but none of these reasons will be explainable in the terms of the game's structure, and is therefore of no concern for us here. When motivation is discussed in the context of choice situations, it is not as an empirical psychological value, but as an option proposed by the game itself, which the player is often enough free to ignore.

As had been said, the use of a human as gamemaster turns a game into something that is beyond the scope of this study. But what is true for such games is also true for games that contain more than one player. In a single-player game without a human gamemaster, the whole of the game system is a created and finished object. This object can have dynamic attributes, and it can, as in the case of video games, even employ the abilities of artificial intelligence, but it can never have the capabilities that human intelligence has. Even though the player, from her own perspective, considers herself as merely a player, from the perspective of her opponent she is part of the game system and its rule structure. For the opposing (or supporting) player, she becomes a part of how the game reacts to her own choices, part of the game's consequence structure. And obviously, this will be an element with a level of contingency that no non-human system will be able to reach.

What is added through the inclusion of humans into the game system has (almost) nothing to do with the medial nature of video games, apart from the fact that they enable such inclusion (but so do board games, sports, or any form of collaborative storytelling). It is not a specific characteristic of video games that opposing human players can react in completely emergent ways, it is a characteristic of all multiplayer games, and ultimately one of life itself. This is why multiplayer games will not have a distinct systematic place in this study.

2 Video Games and Narrative

In order to make a narratological analysis of video games (by investigating them as FNs), one has to demarcate the nature and interdependence of gameplay and narrative in these games. As questions of narrative are the starting point for the whole larger project of FNs, it is only logical that the narrative aspects of video games are put in the foreground here. Establishing the fundamental relation between video games and narrative will serve as the starting point to pursue more specialised questions that may lead towards a better understanding of video games as FNs. This chapter will therefore look at the relation of gameplay and narrative in video games from a theoretical perspective and afterwards explore the occurrence of narrative elements (passive, actively nodal, and dynamic) within video games from a game design perspective.

2.1 Gameplay and Narrative

The discussion about the relation between video games and narrative is still very much ongoing. One general debate that by now rather seems to be a hindrance to productive investigations is carried out between the so-called 'narratologist' and 'ludologist' positions. Without going too deep into this debate one can state that much if not all of the controversy hinges on misunderstood or poorly expressed definitions. The most simplified (and seemingly incompatible) arguments run like that: Narratologists claim that video games *are* narratives; ludologists claim that video games are *not* narratives. In order to see that both standpoints are not mutually exclusive, one needs to specify what they actually relate to. When ludologists claim that video games are *not* narratives, they are giving a partial answer to the question: what is the *essence* of a video game? Their answer to this is, correctly, that the essence of a video game, its *differentia specifica*, is not captured by cataloguing them as just another form of narrative. Or, to put it another way: what differentiates them from other narratives is not the fact that they are narratives. When, on the other hand, narratologists make the claim that video games *are* narratives, they are (or they should be) talking about the properties that video games have or contain. In this sense, video games *are* narratives because they *contain* narratives (just like a picture might be a narrative because it contains one, without losing its *differentia specifica* as a visual image).

Now, a strict ludologist perspective goes even further, claiming that the element of narrative in a video game is not only not sufficient (saying that it is a narrative does not sufficiently describe what it *really is*), but is also not necessary: a video game can be a video game without containing any narrative. As Markku

Eskelinen polemically puts it: "If I throw a ball at you I don't expect you to drop it and wait until it starts telling stories." This means that the narratologist claim has to be further qualified: *some* video games contain narratives. The legitimization for the narratological perspective lies in the statistic relevance of the 'some'. Because an empirical overview of the existing video games, and even more when considering the trends of video game development, will clearly show that 'some' means 'most'. Narrative elements are almost as ubiquitous in video games as visual elements (about which one could make the same claims of non-sufficiency and necessity), and their importance and complexity increases steadily, which has led Marie-Laure Ryan by way of compromise to talk about an "elective affinity (rather than necessary union) between computer games and narrative" (*Avatars of Story* 183).

And, it shall be claimed here, this elective affinity is to be explained not only as a statistically significant, yet at its core arbitrary fact; more importantly, it is based on an underlying, structural affinity: the fact that fiction itself works like a game and that games, by being about something that is not identical to reality, work like fiction. The common denominator between fiction and games are – surprisingly enough – rules. They are not what distinguishes 'games' from 'narratives'; as *suggestions to assume that something is the case, even though it is not*, they are the core of both games and fiction. Both fictional propositions and game rules are suggestions to accept an 'as if' situation: in the case of fiction, fictional existents are referred to as if they existed (as if their existence were the case), and in the case of games, rules are followed as if they were necessary (as if it were the case that they were true). In order to better understand their connection, the following chapter will examine closely the way that rules work within games, and will look at what happens when players engage with rules and start to ascribe meaning to them.

2.1.1 Gameplay and Game Mechanics: The Rules of the Game

The idea of gameplay is that a game can only be experienced *as a game* (in contrast to experiencing a game as a spectacle in which someone else is engaged in, as in a soccer stadium) through an active participation. This participation is in the form of actions that are chosen by the player. In order to qualify as a game, the range of options given to the player as well as the in-game consequences of the choices and actions must be prescribed by a set of rules that together form the game mechanics. As Eggenfeld-Mielsen, Smith and Tosca have argued,

> [r]ules, arguably, are the most defining characteristic of games; they are the element shared by everything we usually understand as a game, and are the element that sets games apart from linear media such as novels or movies. (99)

The qualification noticeable in the 'usually' most likely refers to those forms of play that are not structured by any rules, but completely spontaneous and free-form expressions. Roger Caillois has called this *paidea* in opposition to the rule-based *ludus* games (11–36). When one includes pure *paidea* (rare enough since humans have a natural tendency to 'spice up' paidea through the introduction of rules) into the category of games, games do indeed become most likely impossible to define.[17] The following will be concerned with what happens when players engage rule structures, but the progressive semanticization that will be described is equally common or important for *paidea* play. Though its origin might be a spontaneous and completely abstract impulse of expression, players will soon enough start to invest their actions and the consequence of their actions with meaning.[18]

Indeed, most games can be defined as rule systems, but within those systems, different rules have different functions and work in different ways. The main difference that will be dealt with later in more detail (see chapters 2.1.2 and 2.6.1) is that between rules that describe existents in the gameworld and those that describe values that hold in the gameworld.[19] Among the existents are, for example, the size and form of the chess board, the number and initial position of the pieces, the movements possible to the different pieces, the fact that one piece can eliminate another by moving to the same place etc. Values that apply to the gameworld are the rule that it is desirable to eliminate the opponent's king, or that it is desirable to win. Since these rules are tied to semanticization in their own particular way, which will be described in chapter 6, the following will concentrate on the first category of rules.

This first type can be further understood both as enabling gameplay options or restricting them, depending on whether one compares the mechanics of the storyworld to a blank slate on which something is added to by the designers, or to

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17 Wittgenstein famously made that claim in his *Philosophical Investigations*: "For if you look at [games], you won't see something that is common to all, but similarities, affinities, and a whole series of them at that." (36–37) Wittgenstein used this example to explain his concept of "family likeness".

18 One might think of the prototypical sandbox, an abstract medium of paidea play that nevertheless often enough leads to the creation of something that is then referred to as a 'castle'.

19 In a very similar sense, Michaël Samyn differentiates between "rules that support the simulation" and "rules that make up the game", which include challenges, goals or rewards (*Video Games as Media*).

the real world in which the laws of physics are the only restrictions that are 'hard-wired' into the system.[20] The fundamental function of the first type of rules in any game is to define the range of options that a player has in a given situation. When one is looking at the gameworld as a blank slate, rules tell the player about the things that she *can* do as well as those she can't. They contain the set of options available to the player, from which the game complexity can be calculated. At the same time that rules define the range of possible options that a player has at a given moment, they also define all those options that are impossible. This is sometimes done implicitly – in the sense that 'everything that is not directly allowed is forbidden' – and sometimes explicitly – 'you are not allowed to choose option x at this moment'.

Especially when looking at games that can be understood as simulations of real-life situations (as most video games today are) and that can be compared to the situations they are simulating, one can see differences between the rules of a game and the laws of physics that can appear as a set of 'rules of life'. Life itself is of course not bound by rules (though rules can be developed out of specific causes) but its options are firmly bound by the laws of physics. These laws are necessary and nonnegotiable. There is no absolute cosmic rule about where a person is allowed to go, but gravity will make it impossible for the person to walk upwards through air. By contrast, all game rules are additional rules that are not necessary. There is no binding reason to forbid upward mobility in a game that is not based on physical space and objects (as is a real-life game of soccer). But many video games, though in theory completely abstract, voluntarily define themselves as simulations of (aspects of) the real world and therefore enter into a voluntary obligation of verisimilitude. This is a kind of contract between the game and the player – 'Let's assume that this gameworld bears a relatively high level of similarity to the physical world that you as player know as your own' – a contract that is strikingly similar to the one that all realist fiction makes between itself and the reader. Just like realist fiction, 'realist games' bind themselves in respect to what they can and cannot state about their world (both readers and players will feel either cheated by a person suddenly and inexplicably flying or will change the realist to a fantastic paradigm and assume 'a different kind of game'). The gain, for both game and fiction, is an economy in the stating of existents, by keeping to what Ryan has termed the "principle of minimal departure" (*Possible Worlds* 51). No realist fiction needs to state things like 'people can't fly or walk through solid

20 While Salen and Zimmerman regard rules as merely limiting ("The chief way that rules operate is to limit the activities of the player" (122)), Jesper Juul sees in them both "*limitations* and *affordances*" (58). These two functions correspond to the distinction between is- and ought-rules proposed here.

objects' because that is already implicit in assuming the realist paradigm. In the same sense, realist games do not need to state these rules, as they will be equally assumed by the player. This is why one can pick up a large number of games and immediately play them without consulting a rule manual beforehand, because one starts the game with a ready set of implicit expectations ('If I am playing a human I should be able to move in all four directions but will not be able to fly' etc.). These expectations will then be constantly modified ('Oh look, in this game I am able to fly, how cool is that!')

Fiction and games are also similar in that the level of commitment to the realist paradigm is never absolute, but always negotiable. No realism is absolute because then it would become the object it describes or simulates. If something in a game *looks like* a door, the player might well expect that she can also enter through this door, though the game rules might state that this is not an option (either because the door does not have any functionality at all but is merely an image of a door, or because the player has not yet met the preconditions for the door to be functional, such as obtaining a key or the ability to pick a lock). Thus, though we usually do not expect them to do so, people might end up flying in stories or games, and this break of contract might turn out to be their selling point. In video games, the laws of physics can be ignored, and their modification be even turned into a central gameplay element, as in *Inversion*.[21]

A further distinction can be made between the way that rules 'work' in games and the real world. All human action is guided by rules, sometimes explicit ones, sometimes unspoken ones, but apart from the 'rules' that are the laws of physics, they are all theoretically breakable. Even most non-computerized games are widely unable to completely enforce their internal rules: it is physically possible to move a chess piece in a way that is contrary to the rules (though by doing that I destroy the game and create a new one, with an additional rule). Video games are unique in that they create worlds in which the rules are nigh unbreakable[22] even though they are completely voluntaristic. This means that, compared to 'life', rules function as absolute confinements of options and choices.[23]

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21 Cf. TeamHollywood.

22 Exceptions can be found primarily in some variants of cheating, or the use of programming oversights (so-called 'glitches'), which can sometimes lead to emergent gameplay.

23 They are absolute, but not necessarily unbending or inflexible. There are game systems that allow for a dynamic modification of the rules in order to accommodate other concerns, which might be social (Hughes 93–119) or narrative. By now, the majority of such 'game systems' is human, such as the gamemaster of a pen-and-paper role-playing game, but video games, too, like *Left 4 Dead* are experimenting with dynamic rule structures.

2.1.2 Semanticization and Fictionalization: Towards Gameworlds

Since they are multimedia agglomerates of diverse elements, incorporating text, interaction, movies, sound and sometimes even tactile experiences (vibrating controllers, motion controls), it is obvious that video games can very easily *contain* narratives, but, as has often been argued, these narratives might be completely unconnected to those elements that constitute the game *as game*. This chapter wants to argue for a more integrative view that takes into account the way that players cognitively process their experience of playing a game. The guiding hypothesis is that players constantly increase or decrease the semantics they associate with the structures they encounter, that they ascribe additional meaning to them (creating what we might call a semantic surplus), or chose to ignore potential meaning attached to them. It is this process that leads to the potential experience of a game system as *gameworld*, as a fictional world with its own self-contained meaning *and* rules.

At the beginning of the play experience stands a process of both de-semanticization and re-semanticization. Starting a game, players choose to ignore all of the world knowledge about themselves, other players, or the game system that they encounter, insofar as it is *not* part of playing the game. This is what it means to step into the magic circle.[24] Within the game, two children's backpacks can lose their function of enabling the carrying around of things, cease to be regarded as backpacks, because their new function is to denote a certain space that, when crossed by a specific object, effectuates a change in the game state. Or, in other words, the backpacks have become a makeshift goal. But this means that these objects, in the perception of the game (a perception that can be shared by actual players and spectators) have not only ceased to be something which they 'really' are (their meaning as it is commonly accepted in the actual world), but have become something which they really are not. Within the game, everything that is not part of the game has no meaning, but the things that are in the game can have a meaning that is nowhere but in the game. Thus, players understand and accept game rules in a way that is analogous to the way that readers of fiction understand and accept fictional propositions.

Many games can be played successfully in a purely abstract way, that is, by taking into account nothing but the rule structure as a self-contained system referring to nothing outside of itself. But one thing that almost inevitably happens

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24 "All play moves and has its being within a playground marked of 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" (Huizinga 10).

when human beings play games is that they will start to invest the elements of the game and its structure – and consequently their own actions and decisions – with meaning that is not reducible to gameplay functions. They are starting to create a frame of reference for the game that is distinct from their own world yet whose understanding is modelled on our own world. In other words, players mentally start to create an imagined world within which the game's actions happen. The physical movement of a chess piece on a board is happening in the actual world of the player, but the *meaning* of that move – for example, the fact that, although physically possible, no two pieces can remain on the same field at the same time – is happening in the world of the game, in which this rule is a fixed property.

So already the creation of rules (or necessities) *not* identical to the rules/necessities that are properties of our own world sets the imaginary world created by and for the game apart *in the same way* that a fictional world is set apart by its fictional existents. Note that this does not mean that the imaginary world necessarily *is* a fictional world, only that they are created in a similar way by a mind that distinguishes a (possible) world from the actual world through the recognition that in this world something is true that is not true in the actual world. In the case of games this is the validity of a game rule, in the case of fiction it is anything that exists there but not in the actual world.

But the similarity between making sense of a game system and its rules and making sense of a fictional proposition highlights how easy it is to move on from one to the other. Players who commit to a game need to imagine it as a world, and it is much easier to do that by semanticizing its abstract properties (rules). One might just think about the fact that the pieces in a chess game are usually not referred to by their mathematical properties or any other abstract term, but by terms with distinct meaning such as 'pawn', 'knight' or 'king'. It is easier to use these semantic terms than to refer to the pieces merely by their position on the board,[25] so it fulfils an additional cognitive function – but at the same time it opens the game for further investments with meaning that are not strictly necessary.

There are almost no games in which there is not at least an element of fictionality in this sense of taking one thing to mean another, a kind of *Setzung*, or positing, saying 'this be now a king'. Even in very abstract games like chess, calling a piece 'king' posits a world in which a king exists (or rather, two kings that are competing in a war of dominance). As this (specific) world does not exist in reality, it must be imaginary. This is why the fact that the king's chess piece might

25 Advanced players might do this, and even get rid of the whole presentational level of the game (the physical board and pieces) and play 'in their heads', but this is generally seen as a proof of their superior cognitive power.

be represented by totally different physical objects is not a refutation of games' fictional nature as Goffman has claimed (19). On the contrary, this highlights the fact that all the different physical tools are merely used to mediate information about the existence of a number of entities in a self-contained world that is different from reality and that cannot be understood by humans other than through the help of the 'fiction mechanic', through the agreement of 'let's just assume, for the sake of the game, that x is the case (even though, as we all know, it is not)'.

It should be clear that this progressive investment with meaning is nothing that is necessary to the playing of a game, or rather, of most games. It is unimportant to successful gameplay whether we refer to the chess piece as 'the king' or 'the piece that is allowed to move for one field in each direction'.[26] It is unimportant, and yet it constantly happens when we play, and it happens with no games more thoroughly than with video games. Video games are the epitome of this tendency to invest the activity of playing with a fictional frame of reference, to imagine our decisions within a rule-bound system as narratively relevant events in a fictional world and to understand the performance of a game as the gradual development of a narrative story. Video games are the triumph of fiction in gaming, or as Jesper Juul has put it, "the emphasis on fictional worlds may be the strongest innovation of the video game." (162)

As existing games show, the merging of a game's rule system and its presentation as a representation of something that cannot be reduced to the rule system (its semantic surplus) can be anything from tenuous to inextricable. On the one side, there is no gameplay disadvantage whatsoever for completely ignoring the little semantic surplus that chess offers its players. On the other hand one might look at a game like *L.A. Noire*. Structurally, this is not much more than a classic point-and-click adventure game using the detective genre. The player searches crime scenes for clues, and has conversations with suspects and witnesses. The underlying structure is relatively simple, but because of the way that the game is presented, the player's engagement with it will make use of her full range of cognitive capacities. Players are listening to statements that are spoken by trained actors, and even the facial animation of the non-player characters in interrogations is modelled on real-life acting through special motion-capture techniques,

26 Michaël Samyn points out both the lack of necessity and the ease of rule-semanticiziation: "Narrative is not an essential element of games. But it is often easy to add a narrative layer to a game, as it develops during play – even to a board game or card game. Because games involve relationships between elements, and it's very human to pretend that these elements are characters in a story. So games can easily be told as stories, stories of conflict. But at their core, games don't need stories. They are systems, sets of mathematical equations, logical constructions that the player can combine and play with." (*Contradiction of Linearity*).

and so players have to judge these social interactions in ways similar to real-life ones. They have to evaluate voices and facial features together with the stories they get told, and make (gameplay) decisions based on their evaluations. Arguably, a player without game design information (as in a walkthrough or strategy guide) will not be able to successfully play this game while ignoring its semantic surplus. Though from a game design perspective, we can still easily tell apart the gameplay structure ('in the first encounter, the first option will lead to state a and the second to state b') from its semantic presentation ('the first case is about a murder'), *L.A. Noire* is simply unplayable as only a game. Ignoring its semantic meaning also voids it of its gameplay meaning. It is not a fiction and a game, it is a fiction *as* a game.[27]

Rules are constrictions on the player's range of options. They say what is possible or impossible in a gameworld ('pawns can move one or two squares, but not three'), and sometimes valorise options or outcomes ('scoring a goal is better than not scoring, because the team with most goals wins, and winning is good'). All rules are by their nature arbitrary, they are wilfully created by the game designer and there is often no necessary reason why they could not be different. Many rules can be easily understood as having a positive influence on the enjoyment of the general gameplay – if all the pawns could move like the queen, it would make for a chaotic and less compelling game. Thus, there would be no need to explain them any further, and yet there is a general tendency to semanticize the rules along with the gameworld, to legitimise them in a way that turns them into narrative. In this sense, the pawn is just a pawn, and the queen a queen, and the most important piece is a king. The game would be perfectly playable without these names, and yet they do exist and contribute to the attitude with which we play and enjoy these games.

One might object that the rules of a game are highly arbitrary and need no further justification outside of their functionality for gameplay, while, on the other hand, fictional existents in their form, distribution, and connection strive towards probability according to the model of reality to which they refer to. In other words: fiction is realistic, games mean taking a break from reality. But this seems to misrepresent both games and fiction. Fiction is far from being as 'realistic' as it is sometimes made out to be, and the examples of disruptions of *vraisemblance* for the sake of functionality (what is routinely called 'literary convention') are legion. And gameplay, though often an extreme abstraction of real-life situations, and generally supposed to happen within a space that is outside of real-life significance, is nevertheless still routinely modelled on our experience of reality.

27 The main reason why games like *L.A. Noire* can do this is video games' unique ability to withhold gameplay information from its players, which will be discussed later.

That being said, it is indeed the case that both games and fiction are constantly negotiating the power relation between functional obligations and realist recognition, and that this struggle can result in incoherencies. Though storyworlds in video games are almost all modelled on reality, and in their visual display often strive for realism, one should not expect them to be realistic in the sense of always having (or even striving for) internal consistency. One of the reasons for this is that they still mainly function as an embellishment for the rules of gameplay. Jesper Juul has stated this very strongly:

> Most video games create fictional worlds, but games do this in their own special tentative and flickering way: the hero dies and is respawned moments later; the strategy game lets players 'build' new people in a few seconds; the player dies and loads a save game in order to continue just before he or she died; in-game characters talk about the game controllers that the player is using. These things mean that the fictional worlds of many games are contradictory and incoherent, but the player may not experience this as such since the rules of the game can provide a sense of direction even when the fictional world has little credibility. In fact, the player's experience of the game fiction appears not to require much consistency – the world of a game is something that the player can often choose to imagine at will. (9)

Juul later even expands on this: "In addition to incomplete worlds, some games, and many video games, present gameworlds that are incoherent worlds, where the game contradicts itself or prevents the player from imagining a complete fictional world." (123) According to Juul, the major way to cope with incoherent worlds is by referring to the rules, because "when we find it too hard to imagine a video game fiction, we can resort to explaining the events in the game by appealing to the rules." (130) The existence of incoherent worlds seems to underscore the opinion that the rules and the fiction of a video game are only very loosely tied together and generally independent of each other: something can either be explained by the fiction, *or* by the rules.

But there are two aspects that make such a conclusion much less compelling. Firstly, realism in the sense of binding fictional presentation to the probabilities of reality has only rarely even been attempted throughout the history of fictional narrative, and never achieved. Instead, narrative fiction is a game of its own that comes with its own set of functional rules, usually called literary conventions. The fact that characters in drama speak their thoughts out loud or even directly address an audience they should be unaware of violates all rules of probability, just like the fact that a first-person narrator can recall long conversations verbatim many decades after they have happened. And these are examples from genres generally considered as 'realist'. Recipients of fiction have always had to rationalise the unnatural and incoherent elements in the narratives they have been pre-

sented with, and they have always done that with a reference to the functional necessity and benefit of the disruption ('Good that he's thinking aloud, otherwise I would not know his thoughts, never mind that people do not do this normally').

Still, it has to be allowed that verisimilitude tends towards gaining in importance as genres evolve: plays have found ways to legitimise the uttering of thoughts and first-person narratives have acknowledged the existence of forgetting, or of unreliable personal narration. But this very same tendency can also be detected in video game production. Here as well, world-building games do strive for an alignment of storyworld and rules. In games that are story-centred and interested in creating an immersive narrative experience, there is a strong tendency for diegetic legitimization of gameplay rules as well as an adjustment of the rules to the coherence of the storyworld. One might even take the level of integration of rules and fiction as an evaluative criterion for a sub-group of games that attempts to achieve this integration.[28]

Again, no other type of game has gone farther in this than video games. Since most video games render their gameworlds and their existents as highly narrativised fictional storyworlds, there is a strong effort to narrativise their rules as well, especially those that are 'unrealistic', such as the rebirth of a character, or its special abilities. These rules are first of all important for creating the game's specific gameplay experience (not frustrating the player by ending the game with the player character's death, allowing new and interesting options for dealing with challenges) and are in no necessary way connected to 'realism', and yet they are increasingly naturalised so that they can be experienced as part of a coherent storyworld. Obviously, though they are realistic in the sense that existents are attempted to be explained through analogies to reality, such storyworlds rarely are 'naturalistic' in the sense that they adhere to reasonable probabilities. The overwhelming majority rather falls into the 'fantastical' category, employing ideas like magic resurrection, genetic enhancement or reconstruction. Still, there is a difference between explaining rules exclusively in terms of gameplay ('The player has several lives so that she can attempt a challenge again without having to start the game from the beginning') and explaining them in terms of the storyworld ('A Scientist called Dr. Yi Suchong has invented something called 'Vita-Chamber' that can resurrect people who have died of unnatural causes'[29]).

One type of confinement rules that is obviously derived from a semantic perspective on the gameworld and at the same time blatantly disrupts such a perspective are what could be called 'ethical confinements'. The most common example

28 Reviewers and consumers are becoming increasingly aware of this, as the criticism of the 'boss battles' in *Deus Ex: Human Revolution* has shown. For examples, cf. Silver and VanOrd.

29 This example is from the game *BioShock*. Cf. "Vita-Chamber".

of this is the differentiation of many video games between non-player characters that can, and those that cannot be killed by the player character. Looking at the shooter *XIII*, where the player is supposedly a cold-blooded assassin, but where the game punishes the player for shooting a policeman with a 'game over', Miguel Sicart has described such rules as unethical game design when they clash with its fiction (37). *Fallout 3*, on the other hand, is much less restrictive than other games about what non-player character can be killed by the player, turning this into an ethical choice instead of a forced restriction.[30] But even this game has its limits: children simply cannot be killed in the game, and there is no explanation of this fact in terms of the storyworld.

L.A. Noire tries to integrate a similar rule somewhat better into the game-world. Since the player character is a police officer, he is always armed, which should theoretically enable the player to send him on a killing spree (as previous games by the same publisher like the *Grand Theft Auto* series had made possible and popular), though that would be way out of character. Thus the game is strongly restrictive in that the player character is only able to draw his weapon when he is himself attacked. When chasing a suspect, the player character can draw his weapon, but only fire a warning shot. Shooting directly at the suspect will automatically fail the mission. This changes as soon as the player character is attacked by the suspect. Though clearly restrictive, the game aligns its restrictions with standard police procedure, communicating to the player that the rules are coherent with the game's fiction.

Like all other media, video games constantly provide their users with information, always presenting the current game state. When the player does something, the game represents that action and presents its consequences through a depiction of changes in the game state. Again, this information can be restricted purely to the most abstract aspects of the game's rule system (one might think of a chess game rendered in verbal form), no additional information (e.g. on the way that the chess pieces look) is necessary. And yet, as we have seen, such additional information is more than common, not least because it makes playing games so much easier cognitively. After all, though not necessary, most games of chess are played with a chess board visible in front of the players.

Video games have been successful mainly for two reasons that are determined by their medial form: firstly, since they are dynamic, they can employ highly complex rule systems beyond anything encountered in previous games.

30 The player character has the ability to kill and rob every character she is able to, and it is paradoxically the very fact that she can take whatever the murdered person had on him (therefore 'rewarding' the player for her deeds) that highlights her responsibility for this action as it is wholly on the side of the player.

And secondly, since they incorporate most previous forms of visual media (text, audio, film), they are more efficient at infusing their gameplay information with an excess of additional information that is concerned with the concrete shape that the gameworld takes. They play well, and they look good.

In fact, as will be discussed in more detail later, because of their combined ability of presenting recognizable 'realistic' gameworlds and of enforcing game rules, video games are exceptionally able to *withhold* at least some gameplay information. Of course, no game can function without giving some minimal information about not only their existents, but also their rules and goals. Gameplay information is necessary. It is marked by a self-reflexive willingness to acknowledge the game's status as game, by directly addressing the player ('It is *your* turn now') and by directly referring to the rules ('It is your *turn* now.'). One can classify information given by a video game depending on whether it relates to the diegesis or the rule system. The information that surrounds a player choice can both distance the player from the semantic level of the game, reminding her that she is after all just playing a game, not experiencing something that is modelled on properties of the real world, and it can create that semantic level in the first place. This is largely dependent on whether the player is provided with game design information or with gameworld information. Distinguishing further between the primary media employed (text or visual elements), one can describe four basic types of information that are provided by a video game: textual and visual commentary (game design information) and narrative text and visual presentation (gameworld information).

Textual commentary contains all textual elements that reflect on the way that a game is being played and that directly provide information about the game's rules. These are often commands directed at the player instead of the player character and refer to the game as game, for example to the real-life interface the player is using ('Press x rapidly'). But it can also be information about the game's state (again: as game), for example the (numerical) value indicating the amount of damage that an attack has just caused. Such a number is not part of the storyworld (though its relative value might be).

Narrative text, by contrast, contains all textual elements (written or spoken) that contribute to creating the storyworld. They can be in the voice of a narrator (mediated narrative text) or in a voice that is itself part of the storyworld (immediate narrative text).[31] Narrative text can be a prologue that is presented or spoken before the beginning of actual gameplay, or an overheard conversation by two non-player characters. The distinguishing feature of narrative text is that it only

31 This difference, existent in all narrative texts, is perceived as more distinct due to video games' dominant visual mode of presentation.

refers to properties of the storyworld, and does not acknowledge that this storyworld is part of a game. Thus, for example, it is only the player character that is directly addressed, and not the player.

In addition to this, many games also provide a *visual presentation* of material space in a video game. It presents material space as something that really exists as part of a storyworld, and is therefore part of the diegesis. All passive visual narrative elements such as cut scenes fall purely under this category, as well as all actively nodal presentation that does not contain visual commentary.

Visual commentary, on the other hand, is the visual representation of gameplay aspects. Things represented on this level are not existents of the storyworld, but ideas, concepts, or abstractions that directly relate to aspects of the game's design. Among visual commentaries are most representational spaces such as abstract maps (when they do not exist in the storyworld)[32] or representations of player progress, or (non-diegetic) menus.[33] But they can also appear within presentations of material space, for example, as the quest prompts that are often visible above the heads of non-player characters. In many games, non-player characters that can be interacted with are marked by a special symbol that is floating above their heads, a symbol that is visible to the player but that is not part of the storyworld, and should therefore not be visible to the player character or non-player characters – no figure in the storyworld would comment on it.[34] Even more integrated are other visual modes of representation that distinguish certain elements in material space that can be interacted with from their surroundings. These will sometimes have a specific glow or will visibly flash from time to time, so that the player can, for example, distinguish between doors that can be opened and doors that can't.[35]

While it is theoretically possible to distinguish between the different types of information described here on the textual, visual, and auditory level, a look at the actual practice of game design will show that they are constantly being mixed together. Narrative text, textual commentary, visual presentation and visual com-

32 In the CRPG *Risen*, for example, the player will only be able to access a map after the player character has found one within the gameworld.

33 The game *Fable III* attempts to completely integrate the gameplay menu's functions (such as equipping clothing or weapons, but also adjusting game settings) into the game's storyworld by giving it its own, diegetically explained, material space. Thus, the player character actually *walks* through his menu in this game.

34 With the possible exception of parodist games like *Bard's Tale* or *DeathSpank* that include metalepses.

35 A relatively new type of gameplay information relies completely on (non-verbal) sound that is not part of the diegesis. Thus, in the *Fallout* games, the musical score will automatically change as soon as the player enters or leaves a spatial zone of danger. In *L.A. Noire*, when investigating a crime scene, a certain score will play that automatically stops once all clues have been found.

mentary can all be present simultaneously for the player to perceive. And the integration goes even further, because both narrative text and visual presentation are capable of providing game design information without acknowledging it. That is, a video game can not only embellish an existing rule that the player already knows with additional information that integrates it into a fictional storyworld, it can also communicate this rule as though it were merely a part of the storyworld. This impression is necessarily an illusion, but for the player who 'plays' both the game and its fiction, the two become indistinguishable. When encountering a dragon (or rather: a part of the game system that 'looks like a dragon'), the player will assume that she faces an opponent that is more dangerous than if she were to encounter what looks like a tiny bunny, an assumption that is purely based on the presentational level.

While the fictionality of the diegetic level calls for the player's willing suspension of disbelieve (which is not the same as believing the fiction to be true), the actively nodal nature of a game calls for a similar mental activity, in which the player knows about the game's rules, but acts as if they were not game rules, as if she were *not playing*. A game is a game because it has no consequences in real life, the valorisation of consequences works only within the game. Thus, a player who is constantly remaining aware that she is merely playing a game is not playing the game for any intrinsic reasons (because there *is* no reason to play a game), she is not *playing* the game, but doing something else while performing the actions of playing a game, for example humouring a child who wanted to play, passing time with a senseless activity, or analyzing the structure of a game. In the same way, a reader of a fiction who mentally comments every sentence with 'This is not true' is not properly engaging with the fiction *as fiction*, though she might read every word of it.

Thus, playing games and reading fiction are both activities that involve the temporal and partial neglect of knowledge in order to function. The effect of this neglect can in both cases be described as one of immersion. In the case of narrative, immersion means holding something to be true even though one knows that it is not, and in the case of gameplay, immersion means accepting that something has value even though it does not (for example moving a leather ball across a specified line). With this in mind it becomes obvious that, far from being detrimental to each other, or each other's immersion, gameplay and narrative can be mutually enhancing. When presented and explained as part of a storyworld, gameplay information can be naturalised much easier by the player, lessening the effort to become involved in the game as game, and the level of commitment to and involvement in the game can heighten the interest in the storyworld.

The storyworld of a video game is the fictional world in which the structure of the game and its rules as well as the actions of the player within it are given

meaning. It is the product of the player's semanticization of the rules and existents of the game system. As Jesper Juul and others have argued, it is helpful, especially when looking at video games, to distinguish between narrative and storyworld.

> We should point out that it is easy to confuse fictional worlds with narratives. This is because one of the ways we understand a narrative is by filling in the gaps: we postulate connections between events, we interpret the motives of characters, and so forth. In other words, we project an imaginary world. In the same confusing way, when video game designers talk about narrative, they usually refer to the introduction of elements that prompt the player into imagining fictional worlds[.] (Egenfeldt-Nielsen, Smith, and Tosca 174)

According to Marie-Laure Ryan, we can understand a 'fictional world' as a 'fictional recentering', i.e. as the centre of a system of reality as we read.[36] To impose our own world would therefore lead to a misreading. Also, the concept of storyworld helps to point out that there are narratively relevant elements to a narrative/text/artefact that are not rendered in the form of a sequence narrative, but that are, for example, organised in an encyclopaedic form (as in Milorad Pavic's novel *Dictionary of the Khazars*, or in the embedded narratives to be found in the games *Dragon Age* or *Skyrim*).

The storyworld consists of four different aspects that are related to time in relation to the narrative moment (the moment at which events take place, not the moment of narration):

- the back story
- the world state
- the events
- foreshadowing

Storyworlds are expanses of time as well as of space: the information given about them contains spatial properties as well as a time span, and just as the whole space can be said to exist when looking at the storyworld as an aggregate of all its constituent texts, so does the whole of the time span. And yet while perceiving the constituent texts, there is usually the impression of a present moment, the moment at which events happen. Every narrative text that constitutes the storyworld contains such (shifting) present moments. Additionally, among the different presents, one will usually be privileged as the dominant narrative present, the 'narrative proper' in relation to which other events are perceived as 'past' or 'future'.

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36 See Ryan *Possible Worlds, Artificial Intelligence, and Narrative Theory*.

A storyworld in a video game is a mental construct made by the player that is triggered by a number of forms the player encounters during, but often also before and after gameplay. These elements are presented through a whole range of different media and narrative strategies.

- straight (passive) narrative such as expositions or cut scenes within gameplay, but also trailers, movie tie-ins, comics or supplementary novels outside of gameplay
- all forms of spatial narrative such as visual clues, evocative spaces etc.
- embedded narratives such as audio logs, diary entries, or encyclopaedic information
- dialogue with non-player characters
- the interactions of the protagonist with the gameworld

A storyworld, when it has been constructed, is positioned purely on the diegetic level – it is everything one can know about the existents and events that are the diegesis. As a mental construct, the storyworld is to an extent independent of narration (the act of narrating), in the sense that many changes in the narration would not bring about a change in the storyworld, for example a change in narrative chronology.

So far, we have been talking about storyworlds as they exist equally in novels, films, or games. But, as we have seen, video games are obviously more than the fictions they can create; they are primarily games, inducing the player to create a mental image of the game's state at any given point during the gameplay. This 'game state' consists of all information about the game system, such as the position of the pieces on the chess board, whose turn it is, or the score of a soccer or video game. As the game progresses (meaning that the game state changes) the player needs to record these changes that were introduced by her actions and the game system's reactions. Like a storyworld, the game state as mental image is therefore also something that expands through and changes in time. But in contrast to, for example, a novel's storyworld, the progression of game states is not a fixed property, but rather a range of possibilities that is dependent on the player's agency. Every time I read a novel, the changes that occur in the storyworld will be the same, but two runs of a game should allow for at least two different outcomes.

The player simultaneously and continuously constructs mental images of both the game state and (to the extent that it is existent) the game's storyworld, sometimes neatly dividing them ('There was a fight which I won by spamming the circle button, and then there was a cut scene in which my character killed the monster'), sometimes rather perceiving them as a unity ('Because I learned the shout 'dragonfall' I could fight the dragon Alduin who, before that, was invin-

cible'). The use of the term *gameworld* is therefore meant as a reminder of this double nature of the mental world that a player constructs while playing a game as both an idea of the game state and its fictional world. A gameworld is the state of the game system *and* the storyworld throughout a specific run of that game as perceived by the player. One major difference to other fictional worlds is that one game system can lead to the creation of multiple gameworlds that can differ in their *existents*, whereas other fictional worlds, even when cognitively recreated by different recipients, can only differ in the *evaluation* of the existents, that is, their significance, the inferences that can be drawn from them, the things that they presuppose or that they can be expected to effect and so on.

The gameworld is something that is created between the game designer and the player, it is part perceived (the existents and events that are presented as a given by the designer) and part performed (the narrative that the player forms in her mind to express her individual performance of the game, including decisions made). Storyworlds are of major importance to video games and their cultural impact, but that doesn't mean that they are identical to the storyworlds of prose fiction or motion pictures. Nor can they be evaluated according to the same criteria. Because in video games, storyworlds can be interacted with – to a degree, the player has an influence on these storyworlds that far surpasses the usual activity of imagining it and filling occasional gaps ('Leerstellen'). Whereas filling gaps in conventional narratives is an activity of deduction and/or projection, in actively nodal narratives it is much more an activity of deliberate choice and creation in the sense that the player decides that one thing exists (the option chosen) and another doesn't (the option not chosen). This can be seen for example in the German pen-and-paper role-playing game *Lodland*. The developers of this game included several so-called 'white spots' in the official world map of the game. Those are areas that will never be described within official publications, but can be filled in by each individual gamemaster without creating incoherence with the canonical gameworld.[37] Every fictional world also has blank spots, but they cannot be filled with specifics without violating the integrity of the fictional world. In a game that creates a fictional world and – because it is a game – grants some degree of agency to the player, though, this world is unfinished by design and can only be completed through the active involvement of the player. Sometimes, as in the case of *Lodland*, or in games where players are allowed to choose a name for their player character, the additions are not prescribed by the game's designers, sometimes there is a limited set of alternatives out of which one is actualised and therefore becomes a fact for the storyworld.

37 Cf. *Lodland*.

2.2 Narrative Forms

Once it is established that, rather than games *being* narratives, they *contain* narratives through narrative forms, it is helpful to enumerate these forms and classify them according to their nature and mode of operation. The merest glance at the contemporary state of video games will show that narrative is an almost ubiquitous and very visible presence. The times of text-based adventures have long given way to highly elaborate and realistic visual displays, and video games today are marketed just as films are, with trailers that pitch visuals and story. A closer look will reveal that the storyworlds developed by and experienced through video games are highly elaborate, complex, and deep – though not necessarily original.

2.2.1 Passive Forms

A large part of the presence of narrative in video games – and that part that is most visible to an outside perspective, one that is looking at games instead of through them – is constituted by forms that cannot be interacted with by the player. These are mainly textual narratives (written and spoken, such as logbooks, letters or audiotapes) and cinematic narratives (called 'cut scenes'). While these are very effective in creating narrative, they often rather heighten the divide between narrative and gameplay. A negative example for this is the game *Watchmen – The End is Nigh* that alternates cinematic narratives (both rendered in-game and in a graphic novel style) with a highly repetitive and interchangeable 'beat-'em-up' gameplay that, except for one occasion, has no effect on the narrative at all.

All passive narrative forms are in themselves *experienced* as passive and therefore identical to the media from which they are appropriated (film, text, audio), but they can, and usually are, *contextualised* in an actively nodal way, since they are forms in an actively nodal structure. So, for example, when passive forms like textual narratives are embedded into the game-world, and need to be actively found by the player in order to be experienced at all, they can heighten the non-unilinearity of the game's storytelling. Though these mini-narratives are usually all part of the storyworld and its meta-narrative (e.g. personal stories of in-game characters), the player can choose to read them whenever she wants, and the order of their encountering is often not pre-determined.[38]

38 Sometimes it is, as in the narrative that forms the background myth of *Brütal Legend*. Though the player encounters parts of this story in different specified places in the game-world in an order that he chooses himself, he will always find the parts in the right chronological order.

2.2.1.1 Exposition

Many video games that create and employ fictional worlds start with a narratively conveyed exposition (often called an intro) before the actual gameplay starts. The function of this is to introduce the player to the fictional world and its properties, to provide information about the character that the player is going to play, and to introduce the main objectives of the game, though not all of these elements need to be present. Introducing such a passive narrative form before the player is even allowed to take over the controls is a hard to ignore marker that the game does indeed project a fictional world and that knowledge about this world will be important for a full appreciation of the game.

Video game expositions can use different modes of presentation or media, such as written or spoken text, graphic or cinematic narrative, though the tendency is definitely towards the latter. Games like *Final Fantasy XIII* or *Metal Gear Solid IV* begin with long and elaborate cinematic sequences that are almost indistinguishable from real-life movies. This has become such a standard that there are already parodies of the convention, such as the "Unskippable" segment on the game magazine *The Escapist*, the name of which is already an allusion to the passive nature of such forms.[39] Introductory sequences or texts can almost never be skipped by the player. They are closely related to the cut scene, the main difference being that they are not interrupting but preceding gameplay, and that they do not need to be a representation of material space.

2.2.1.2 Cut scenes

A cut scene, more generally, is a filmic sequence in a video game that unfolds without the interaction of the player. Cut scenes are sometimes also referred to by other terms such as cinematics or in-game movies. Cut scenes that are streamed from a video file are sometimes also referred to as full motion video or FMV, but this is a technique that is quickly becoming obsolete.

Usually, the player has no control whatsoever over the game while the cut scene is playing. Some games, like *Final Fantasy XIII*, that rely heavily on long cut scenes, allow the player at least to skip them. But other than that, cut scenes are marked by the missing interaction. As such, they are not part of the gameplay, but rather an interruption to it, though they can be contextualised as a sort of 'reward' for the player's completion of a specific game objective. Besides, their purpose is usually to provide narrative content presenting pre-scripted events, characters in characteristic actions, dialogues, or giving background informa-

39 Cf. "Unskippable". Interestingly, the producers of the series in a way reclaim agency for the 'unskippable' segments of video games by overdubbing them with an ironic audio commentary.

tion on the storyworld. The existence and prevalence of cut scenes, together with their separation from gameplay is often taken as proof that narrative and gameplay are completely distinct: "Of all the more cinematic digressions from gameplay, however, the cut-scenes are probably the least interesting in formal terms as game-fiction gives way to a form of ersatz movie-making in which the player has minimal investment or involvement." (Atkins 37) At least visually they have recently strived for a better integration into the gameplay experience. Cut scenes can either be animated or use live action footage. The distinction between gameplay and cut scenes was especially pronounced in those games (mostly earlier ones) that do not use the game engine to create the cinematic sequences, but that create them in an independent way, leading to two distinctly different visual styles. One of the earliest games to use filmed footage for cut scenes was *Wing Commander III* in 1994. Utilizing the new medium of the CD-ROM, the game included long scenes with known actors like Mark Hamill. But also computer role-playing games (CRPGs) like *Diablo* employ recognizably different visual styles for gameplay and cut-scenes. While the gameplay is presented in a fixed isometric birds-eye perspective, the cut-scenes use cinematic techniques to the best of contemporary hardware's abilities. By contrast, more recent games have started to minimise the visual differences between cut scenes and the visual representation of gameplay. In *Dragon Age*, not only are the cut-scenes rendered on the same engine as the gameplay (making them visually similar or even identical), the player's actions up to the point that lead to the cut scene might also influence some visual aspects of the scene: as the characters are fully customizable in the clothing they are wearing, the cut scene will show them wearing exactly those clothes that the player has selected. An even stronger integration of the function of cut scenes into gameplay is the use of strongly scripted sequences using event triggers in the way that *Modern Warfare 2* does. Events and sometimes dialogue still happens in a pre-scripted (and pre-rendered) way, but the gameplay is not halted anymore. But, arguably, the last two examples already blur the line between passive and actively nodal forms.

In narrative terms, cut scenes have the advantage that their narrative purpose (conveying specific information) cannot be thwarted by the player's *tmesis*,[40] her freedom to chose what to perceive (also present in the freedom to skip pages

40 'Tmesis' is a term that comes from linguistics, where it denotes the phenomenon of a single word or phrase being separated into two parts, with other words being inserted between them. The term was taken up by Roland Barthes to describe the activity of reading as one of free agency that is not controlled by the text's author. Thus, 'tmesis' designates the reader's freedom to skip parts of the text, or to read the text out of chronology, and thereby possibly 'insert' text into a fixed sequence (cf. Barthes 10–11 and Aarseth, *Cybertext* 78).

in a book or to fast forward parts of a movie), which would necessarily include the freedom to miss or ignore the depicted events. If an important event would happen at a specific place in the gameworld *and* a specific diegetic time, chances would be extremely high that the player misses it, if only by looking the other way at the wrong moment. A cut-scene is therefore disconnected from play time (its position within play time is not fixed, it does not always happen, say, half an hour after starting to play), but when it is engaged, completely aligns play time and diegetic time – it will take the player always exactly the same amount of time to watch the cut scene.

2.2.1.3 Loading Screen

A rather odd but increasingly important form that can be used to transport narrative content are loading screens. A loading screen is what players of video games get to see when the game needs to disrupt gameplay time in order to load data. This can and often is perceived as merely disruptive of narrative immersion. But loading screens are also often used to convey both gameplay information and narratives to the player. CRPGs like *Dragon Age* use loading screens to give the player narrative background on the storyworld, and the gameplay tips in the loading screens of *BioShock*[41] and *Fallout 3*[42] are rendered as if they were part of the storyworld. Sometimes, the loading screen is designed in such a way as to completely disguise its nature by being intradiegetically legitimised and presented as part of the storyworld. Thus, games like *Metroid Prime* and *Mass Effect* have 'hidden' loading screens disguised as elevator rides. In *Modern Warfare games 2*, the loading screen is a cinematic sequence (cut scene) that provides a 'briefing' both for the player and the player character, in one case by depicting the invasion of the US by Russian fighter jets.

2.2.2 Actively Nodal Forms

As has been shown, video games can easily incorporate narrative forms from other, passive media, which is hardly surprising, since their modes of presentation are also borrowed from other media, mainly film and written text. But on top of presenting themselves to the player in a certain medial way (for example as moving images or readable text on a screen), they are also dynamic systems for interaction, so that many of the presented forms with narrative content are also

41 Cf. "BioShock Loading Screen Quotes".
42 Cf. "*Fallout 3* Loading Screens".

actively nodal, that is, their content and/or their presentation is related to the player's actions. The main forms under consideration here are quick time events, dialogue trees, and event triggers.

2.2.2.1 Player Actions

Obviously, any kind of action that the player character is able to make within the gameworld can be perceived by the player as a narratively relevant event. If the player walks through the room, the activity of walking becomes an event in the gameworld. The same is true for opening doors, shooting at enemies, or picking herbs and flowers.[43] The difference to the forms described in the following is that the latter are not as exclusively dependent on the player (the player *makes* something happen), but rather combine events happening independently of the player (something *is happening*) with the player's ability to actively participate in the event. As such, they are able not only to convey more complex narrative information, but also to introduce events and narrative information that is not originating from the player. Player freedom in video games is always a negotiation between the player's input and the game's input, and the same goes for the unfolding of a game's narrative. In a cut scene, the player's input (and ability for input) is zero, things happen whether she wants them to or not. In the case of opening a door or picking a flower, the player's input is decisive, and the game becomes merely a reporting device: this event can only happen if and when the player makes it happen. The game, given that it has enabled the player to make the event happen (sometimes what looks like a door is not meant to be opened, and not every herb can be gathered), can only record the consequential change to the game state, by presenting the door as opening, or by displaying the message 'You have picked a flower' and storing it in the player character's inventory. In the case of quick time events, dialogue trees, or event triggers, the input is distributed between the player and the game system. Things happen, but the specific form of the event is influenced by the player.

2.2.2.2 Quick Time Event

The actively nodal version of a cut scene is called a quick time event. Some of the games that make different but integral use of quick time events are *Heavy Rain*, *God of War*, or *Shenmue*. The game that popularised quick time events in video

43 CRPGs like *Skyrim* and adventure games encourage the player to collect items from the gameworld. In adventure games, items are often used to solve problems, by applying them to other parts of the gameworld; in CRPGs, items can be combined to craft other items that the player character can use or sell.

games was the 1980 arcade game *Dragon's Lair*, one of the few games that almost entirely consist of quick time events.

Quick time events are pre-rendered video sequences that can be interacted with by the player. Compared to normal gameplay situations, there is a dramatically limited range of options, as well as a strict limitation on when options become available. A passive video sequence will be shown to the player until a node is reached, which is indicated by visual prompts telling the player that she can now interact, usually by pressing a specific button. The nodal situation is timed, that means it is available from the time the prompt appears on the screen until a specified time when it disappears. In the case of a single input option (for example 'press x'), the options available to the player throughout the nodal situations are 'press x' and 'do not press x'. At the end of the nodal situation, if the player has not reacted, the choice of 'do not press x' will be actualised. Depending on the choice made, a different visual continuation or a game over screen will be shown, or the game will return to normal gameplay. This branching can be made visible by a cinematic cut, or it can be made to appear seamless, as is often the case in *Heavy Rain*.

The timed nodal situations of quick time events are often extremely short, forcing the player to react as fast as possible, for example in a fight sequence. In these cases, there is generally no deliberation involved in whether the offered option is desirable, as the player will always assume that it is.

One could distinguish two main structures of quick time events that could be called teleological and branching. In the teleological form, a fixed sequence of events unfolds, and the task of the player is to make sure that the sequence continues uninterrupted. An interruption usually means the end of the sequence and is not an accepted option. An example for this is the boss battle in *Resident Evil 4*: a single wrong prompt will get the player killed, which leads to a game over situation. Since all game over situations are identical and none provides any satisfactory narrative closure,[44] they cannot be regarded as valid branching options. There is really only one true course of events that either happens or does not happen. In the branching form, on the other hand, a sequence of events is shown to the player, followed by a prompt for a specific action. Depending on whether the player follows the prompt correctly or not, different sequences are shown as a consequence, none of them leading to a game over situation. This is used most

44 An exception to this was the very early quick time event game *Dragon's Lair*: "Part of Dragon's Lair's appeal was that the hero's deaths – not just his triumphs – were unique animations. Dying is part of the game. Seeing each of the hero's deaths is as essential to earning encyclopaedic knowledge of the game as seeing each of his triumphs." (Rogers)

consistently in *Heavy Rain*,[45] but has already been used in earlier games such as *Fahrenheit* or *Shenmue*. The advantage of branching quick time events like those in *Heavy Rain* is that they combine branching storytelling and visual representation in a seamless way. Though there is no structural difference between them and the prompts in a CYOA-movie (except for the element of timing), the experience is much more fluid and natural, though at a cost on the level of agency.

Quick time events are actively nodal but they can hardly be said to involve real player agency. The only real choice involved is (potentially) whether to enter the situation that will start the quick time event or not. After that, the player is less of an independent agent and more of the executive tool of a decision made elsewhere or earlier. The way the player experiences these situations, it seems that the decision is often made by the player character (who decides, for example, to dodge an incoming threat instead of blocking it) and the gamemaster then asks the player to enable the character to act out that decision. As this happens in a quick succession, no deliberation on the part of the player is possible (as in 'do I *want* the character to dodge?') and usually also not necessary, as the decision will be presented as one without alternative.

A significant variation of this can be found in *Mass Effect 2*: Most conversations here are presented as cut scenes with a dialogue tree. Occasionally, these cut scenes will become recognizable as quick time events (called 'interrupts') through the appearance of a prompt that needs to be followed in time in order to be activated. But here, these prompts are neither self-evident in their necessity, nor obligatory for progressing, but represent instead optional ways to significantly change the course of the conversation and situation in ways that are marked as either 'paragon' (i.e. honourable) or 'renegade' (i.e. more selfish and cruel). Thus, the player knows that a specific prompt will make her character behave in a certain predefined way (though the exact consequence or sequence of events is not known when the prompt appears), and it is her conscious decision whether to activate the prompt or not. These quick time events are always of the branching type and do not cause game over situations.[46]

45 *Heavy Rain* is strongly dependent on quick time events. On the other hand, its quick time events attempt to use the full potential of the PS3-controller to establish a relation of similarity between the player's input and the character's action. This is (presumably) even enhanced with the move edition of the game.

46 For more on *Mass Effect's* interrupts, cf. "Interrupt".

2.2.2.3 Dialogue tree

Another very common form that combines an actively nodal form with a high effectiveness for conveying narrative information are the dialogues that the player character can hold with non-player characters he meets in the gameworld. These dialogues as part of the gameplay process that are not completely pre-scripted in a cut scene, are especially common in CRPGs. Incorporating dialogue into the gameplay de-emphasises other aspects like combat. In a first-person shooter, what moves can – and probably should – be shot, whereas a game like *Planescape: Torment* strongly encourages its players to use conversations to achieve their goals, to the extent that its script is said to contain 80000 words.[47]

One main criterion that distinguishes what is most commonly meant by the term non-player character from other figures that function merely as a structurally indifferent visual backdrop or an enemy to be opposed is the fact that the player character can usually *talk* to them. This means that, upon approaching such a non-player character, the game will offer the option to engage in a conversation or the proximity will automatically trigger the beginning of such a conversation. Conversation situations will usually limit the player's range of options (combat options and other interactions with the gameworld are usually disabled, and spatial movement is limited or disabled),[48] but the player can still influence the course of the conversation. If it is not presented as part of a cut scene, it usually makes more than one dialogue option available for the player to choose from, thus creating what is commonly referred to as a dialogue tree. The choice is generally restricted to the dialogue options of the player, and the non-player character will in turn react differently to different statements or questions. The dialogue choices are presented in written form and are arranged simultaneously on the screen,[49] with the action pausing until one option has been chosen. Some games, like *Heavy Rain*, try to increase realism by sometimes giving the player only a limited amount of time to choose, and even further complicate the choice in situations of stress by making the on-screen script unstable, blurry, and hard to read.[50]

There are different structural types of dialogue trees that are influential for the (non)-linearity of the gameplay and its narrative: arborescent, cyclical, and

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47 Cf. "Planescape: Torment".

48 For the different degrees, one might compare *Two Worlds II*, where the player character can move in a prescribed area close to the conversational partner and look around, *Skyrim*, where the player character is fixed in position but is able to look around to a certain degree, and *Fallout 3*, where both the spatial position and the perspective are automatically fixed.

49 A minority of (mostly newer) games does not display the exact wording of the dialogue choices anymore but rather provides paraphrases (e.g. *Mass Effect*) or information as to the type of reply one wants to give (aggressive, helpful, inquisitive etc.).

50 Another example of timed dialogue trees are the games in the *Sakura Wars* series.

dynamic. In a purely arborescent type, every dialogue option chosen will disable all other options, while potentially opening up a new set of options. It is seldom used in its strictest form, as non-player character conversations often need to convey important gameplay information, and this form would strongly increase the danger for the player to miss it. Most dialogue trees do not even automatically disable dialogue options once they have been used. This is especially true in those cases where non-player characters provide important information. The questions that trigger the information can usually be repeated endlessly. Still, some options will typically be available once, while others can be repeated. For example, if the player meets a quest-giving non-player character for the first time, there will be a conversation that starts the quest, with a dialogue option that either accepts or declines the non-player characters request. This option will only be available once, while the player can usually return to the non-player character to talk about the task, in order to receive information about it. Purely cyclical forms can be found with non-player characters that do not provide (one time) quests, but some services, such as commerce. Encountering such a non-player character, there will usually be a short (and always identical) dialogue, where the player can choose whether she wants to buy, sell or repair something or not.

Many non-player characters can be engaged in conversation several times throughout the game. Depending on events that happen between the encounters, the dialogue can change, though some options still remain the same. For example, the player character talks to a non-player character, and as a result gets a request from the non-player character to fulfil a specific task. With this, the conversation comes to an end. If the player engages the non-player character again in a conversation, without having completed the task, the non-player character will open the conversation with the question whether the task has been completed or not. In most cases, the player can only answer in the negative, which will again end the conversation; alternatively, she can ask for the specific instructions again, in case she has forgotten them. After the completion of the task, the options for conversation will change again. The player is now able to answer in the affirmative, which will result in new options.

But even the most dynamic of dialogue trees must still be considered rather passive in narrative terms, since the non-player characters will usually not be influenced by other events than those that are concerned directly with their interaction with the player character. Thus, the passing of intradiegetic time will often see no change in their attitude; neither will the number of times that the player begins the same conversation. The *Fallout* games are among those that go furthest in dynamizing the conversational behaviour of non-player characters, making their responses dependent on a number of variables, such as faction affiliation,

or the outcome of certain other missions that the player has completed (or failed to complete) earlier, or sometimes even the time of day within the gameworld.

The options available to the player when talking to a non-player character can also differ depending on factors that are related to the character's attributes. CRPGs like *Fallout 3* often contain attributes such as a value for the player character's rhetoric capabilities. Depending on this value, some dialogue options will be available to the player or not. This can vastly influence gameplay, since a character with high rhetoric skills might be able to convince a non-player character to give him a thought for object or access to a closed off area, while a character that does not have the same skills will need to fulfil extra tasks, or find alternative routes to reach the same results. Other games like *Mass Effect 2* make dialogue options dependent on the character's 'ethical affiliation'. Depending on the character's previous actions, she will have gained higher values for 'paragon' or 'renegade', and some dialogue options will only be available to either.

Dialogue trees imply consequence for what the character says, though this frequently is not really the case. Especially in the case of cyclical dialogue trees, they are often little more than a way to provide information to the player, some of which she might need for later decisions, and some not. The *Mass Effect* games are rather singular in that they give (gameplay) consequence to dialogue options in themselves (rather than through the action they provoke), strengthening the idea that the way someone leads a conversation is actually an integral part of how they (role)play a game. On the other hand, the games also have a tendency for railroading the player in her dialogue decisions.[51] This is possible because the player does not decide (as in most other games) on the exact words that her character will use as a response, but rather on the meaning and tone of the answer. In some cases, the answer actually made by the player character will stray rather far from the significance offered as a choice to the player.

Often, dialogue choices will have less of a direct consequence on the events that result from the conversation, than on the player's (also narratively relevant) perception on the character she is playing. A dialogue tree might offer different answers leading to the same narrative result, but differing in tone and therefore characterizing the player character in different ways. In these cases, it is up to the player to decide what type of person she is playing (always friendly and cheerful, or rather cynical, gruff, etc.) independently of the decision she makes with regard to her actions.

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51 The term 'railroading' is common in descriptions of the gamemaster's activity in a role-playing game. In this context, railroading means that the gamemaster gives his players less agency to develop the story they are role-playing and forces them (e.g., by adjusting the rules) to accept the sequence of events he has determined before the game started.

2.2.2.4 Event trigger

One of the most peculiar features that video games use to make things happen in the gameworld is the event trigger. An event trigger defines an action performed by a player that triggers a narratively relevant event that would not have occurred without this action, yet is not causally related to it in the storyworld. It is not an event that is effectuated directly by the player, but whose coming to pass is dependent on the player.

Most often, the trigger is connected to the player character's spatial movement, that is, an event is triggered when the player character enters a specific space. The event itself is a scripted sequence, but in contrast to a cut-scene it happens within navigable space and without an interruption to gameplay time; it can be a line of dialogue that a non-player character utters when the player character passes him, or a bridge that collapses when the player character approaches or just after he has crossed it. The scripted sequences that are being triggered largely take over the narrative function of cut scenes. Their main purpose is to provide narrative information (something happens in the gameworld), but unlike with cut scenes, the gameplay is never stopped, and agency is not taken away from the player.

The important distinction to other player actions lies in the change in causality from the gameplay to the diegetic level, and in the attempt – on the side of the game system – to hide the trigger. The way they are usually designed and implemented in the game, event triggers are mostly invisible to the player. Whereas often options for interaction are visually marked by the game (e.g. a door that can be opened will glow in a specific colour), there is no visual marker for an event trigger, and also no prompt whether the player wants to activate the trigger or not. When approaching a door, games will prompt the player which button to use in order to open it, but event triggers, especially spatial ones, will automatically start when the player has reached the trigger point, which functions like a trap. The design is to create the impression that an event happens by chance, though usually exactly at the narratively and dramatically relevant moment. Most games try to hide event triggers, thereby exchanging the player's perception of a pre-scripted (and therefore completely uni-linear) event to one with a high level of contingency, while retaining the high narrative proclivity that lies in a pre-scripted scene's perfect timing. This is done almost to perfection in big-budget 'cinematic' games like the *Modern Warfare* or *Uncharted* games. Hair's-breadth escapes and spectacular seeming coincidences can be presented to the player in this way, while retaining the illusion that she is in control.

Indeed, the only agency that a player has in this case is temporal control over the triggering, which distinguishes it, for example, from combat situations. Within a combat situation, the player also performs actions that trigger responses, but her actions are themselves already responses to a previously triggered event

(e.g. the encounter of an enemy), and she has no options to delay her own actions without being penalised by the game (if she stops fighting, she will be killed, but if she does not walk through a door behind which an enemy is waiting, this enemy will often keep on waiting indefinitely.) Thus, a bridge that is on the verge of collapse will yet wait indefinitely for the player to approach or cross it, before it will actually collapse. The exact position of an event trigger usually becomes apparent only at a second playthrough, when seemingly coincidental events repeat themselves.

While many game design features attempt to create the illusion of agency where there is none, event triggers are largely used to veil the fact that the player actually does have agency over the happening or not happening of a specific event, while at the same time hiding the fact that the event is in no way contingent, but determined. The reasons for this usually lie in the pacing as experienced by the player. Event triggers guarantee that players actually get to experience events without feeling that they are forced to do so (as is often the case with cut scenes). Also unlike cut scenes, they do not interrupt the flow of the gameplay, since the events triggered happen within the navigable space while the player still has control over her player character. This leaves the problem of player's *tmesis* potentially thwarting the narrative function of event triggers, but it strongly heightens the immersive quality of the events. Games that rely heavily on sensational scripted sequences (like *Killzone 3* or *Gears of War 3*) have started to include button prompts that will alert the player at the right time that something important is happening. Pressing the prompted button, the game will take control of the perspective (but not the player character's movement), moving the player's sight so that it centres on the event.

In all media, narratives happen in time and space. Videogames give the player apparently the option to control space, but not time (the exception being the pause button, but that is a complete disruption of the narrative). Navigable space is usually fixed in video games (it does not shift or stretch while the player walks through it), but if time were equally fixed, the player would miss most of the narrative content that a gameworld provides. The player character would simply not be in the right place at the right time. Therefore, most narrative games are constructed in a way that makes time variable and ties it to the player's actions via event triggers. Historically, the first game to develop event triggers into a central feature was *Half-Life* in 1998. This was partly responsible for the game's great success. *Half-Life* considerably reduced the non-unilinearity of its gameplay, turning itself almost into a rail-shooter (cf. chapter 3.2), but through extensive use of event triggers, the player was kept under the illusion that the events were caused by her action. This made both better graphics and a tighter (because easily controllable) storyline possible.

2.2.3 Dynamic Forms

Since video games can be described not merely as actively nodal, but also as dynamic systems, they can contain forms that are experienced by the player as narrative but that are neither passive presentations (such as cut scenes or screen text) nor dependent on the player's own input (as is the case of event triggers). In video games, in contrast to other games that cannot be classified as dynamic and that do not include real time into their rules,[52] things can happen to or within the gameworld – and therefore affect the player character as part of the gameworld – without the player's participation.

Being mediated to the player through the visual presentation of material space, one could argue that such events should be included within the category of passive forms, but this is problematic for two reasons. First, they are presented seamlessly as part of the gameplay, they happen while the player has full control over her character while at the same time being independent of whatever the player does. And second, while some of the dynamic forms cannot be influenced by the player (like an automatic day and night cycle), others can (especially non-player characters), meaning that some can at least be turned into actively nodal forms.

2.2.3.1 Non-player Character

A non-player character is a character in a video game that is controlled by the gamemaster. A non-player character in a video game is usually part of the program, and not controlled by a human, but through artificial intelligence (AI).[53] Non-player characters are one of the most important actively nodal as well as dynamic narrative forms in video games. Though theoretically every AI-controlled movable entity within material space could be called a non-player character, this term is usually reserved for those entities that are differentiated from others with a degree of individuality and that can be interacted with in a way other than through combat. This interaction predominantly takes on the form of dialogue. Non-player characters are usually differentiated in a visual way (for

52 An example for the latter are all sports games with a fixed time limit. In a sense, 'intradiegetic time' only passes in a tennis match whenever a point is scored (because the game system only recognizes points as events, therefore, as long as no player is able to make a point, from the perspective of the game 'nothing happens'), while in a soccer match, the passing of 90 minutes of real time constitutes an event in the gameworld even if no point has been scored.

53 An exception to this rule are online role-playing games, especially MMORPG, where non-player characters are often controlled by employees of the game company in order to provide the players with a more realistic experience.

example through a quest prompt), but, more importantly, they are distinguished in a narrative way, by having individuality, sometimes even a back-story, and by becoming part of the character's story.

The 'quality' of non-player characters is a very important factor in the narrative immersion that a video game can induce. This quality has two main aspects: how believable is a character and how well is he designed in terms of visual design, back-story and dialogue, and how convincingly dynamic does he/she behave. The actual narratively relevant creation of a non-player character is widely similar to the creation of characters in any other form of narrative, with the same aesthetic criteria applying. The degree to which they are distinguished varies widely, from generic stereotypical characters that are hardly more than their function and a proper name (if that) to full-fledged characters with the potential to involve the player (let alone the player character) emotionally. The death of the character Aeris in the game *Final Fantasy VII* for example is considered an iconic scene of video game history ("GameSpy's Top 25 Video Game Cinematic Moments"), not least because of the surprise that players felt back then that a non-player character *could* be interesting. Today, games that emphasise their narrative depths will also put an increased effort in creating engaging and complex non-player characters, sometimes making a proper understanding of their back story necessary for a successful interaction with them in gameplay terms. An extreme case of this is *L.A. Noire*, a game whose detective structure means that it is centred almost completely on exploring the back stories of non-player characters.

Steve Breslin has pointed out that designing non-player character behaviour is located at the intersection of writing and programming, since true artificial intelligence is still much too far out of reach of contemporary computers, so that the programmer needs to rather create an illusion of intelligence:

> As any AI designer or programmer will tell you, the task of designing a 'believable non-player character' involves fostering an appearance or impression of that elusive philosophical notion of intelligence: the psychological impression of intelligence. [...] The non-player character programmer's plan, then, is essentially to write suggestive and interpretable behavior, so that the player will 'read in' a lot more sophistication than is actually present. [...] The question of non-player character personality in games is always the question of faking it (Breslin).

Thus, 'classical' writing and artistic skills are important for creating non-player characters. Yet because of their actively nodal and dynamic potential, they are more than a character in a novel or play could ever be. As elements of the game design, non-player characters can act and react depending on the player's choices and actions. In the case of the more narratively relevant characters, this interaction is largely designed as pre-scripted option trees, most noticeably in

the structure of the dialogue trees, and as pre-scripted actions determined by event triggers. The latter happens, for example, when the player character is accompanied by a non-player character who might wait at certain spatial points for the player character, reacting only when the player character has reached this point.

But besides this highly narrative but passively pre-structured level of interaction, the player will also constantly encounter numerous 'lower level' non-player characters, whose actions are much less central to the narrative development of the player's personal story (as can be seen by the fact that the player character can almost never enter into a dialogue with them) but can nevertheless contribute strongly (or be detrimental) to the construction of a consistent narrative world. This is accomplished less through writing and more through programming an artificial intelligence for non-player character behaviour. Writing can determine chance comments by non-player characters that the player engages or encounters, but the character's non-verbal behaviour (especially in reaction to the player character) will be noticed by the player as well.

In order to create believable and narratively immersive worlds, games populate their spaces with numerous characters that do not have any or at least only a restricted gameplay function. But even though their function is mostly decorative, these characters are not just the inanimate objects one can see in a painting, they are moving independently through navigable space and still must be able to react to the player character's movements. The *Assassin's Creed* games are particularly apt in populating their game spaces with minor characters that mainly serve the purpose of making the gameworld believable. In these games, the streets of historical Venice or Istanbul are filled with annoying ballad singers that follow the player character trying to coax money from him, or people carrying crates that they will drop if the player character brushes them in passing, after which they start to cry out in anger and curse the player character. In open-world games like *Grand Theft Auto IV* or the *Assassin's Creed* games, the player navigates crowded cityscapes, meeting countless pedestrians by chance. If the player character suddenly stops on a sidewalk, some non-player characters might walk around him, while others might bump into him, excusing themselves or shouting aggressively. If the player then confronts them with violence, they might run away scared or call for help from others. This is already a far advance from earlier games like *Morrowind*, whose spaces the player often experienced as vast and empty in between functional elements, and it shows how intelligent programming of gameworld elements can contribute to the narrative depths and believability of the gameworld.

Recent games focus a lot of energy on the creation of what marketing divisions call a 'living and breathing' gameworld, and which relates (besides such

things as automatic day and night circles or changing weather) mainly to the dynamic nature of non-player character behaviour. This is a significant and rapidly developing trend in game design which can be seen clearly when comparing the different instalments of the *Elder Scrolls* CRPGs, especially *Morrowind* and *Oblivion*. The latest instalment, *Skyrim*, goes one step further, in that every non-player character has a job and will react according to the diegetic time – getting up in the morning, going to work, taking a lunch break and so forth.

AI-controlled non-player character-behaviour becomes even more important in the many combat situations that form the bulk of contemporary gameplay. In these situations, the experience of non-player character behaviour fuses the player's narrative perception with gameplay expectations. An enemy that reacts in a mechanical or erratic way that does not conform to expectations on its real-life model (like a soldier identically repeating actions indeterminably, not getting out of the line of fire, or trying to walk into a wall) will be detrimental both to the player's willingness to engage the gameworld as a coherent fiction and to her enjoyment of the gameplay and its challenges. Here also, great advances have been made, with enemy non-player characters reacting to line of sight, taking cover when under fire, flushing out the player character through different tactics, or even fleeing to call for help. The more complex such behaviour is, the more potential it contains for emergent narratives that are not scripted but heavily dependent on the player's own actions.

2.2.3.2 Timed Events/Intradiegetic Clock

While many video games take place in an ever-frozen intradiegetical present or allow changes in time only between gameplay sequences, some games are aligning real play-time and intradiegetical time continuously: while the game is being played, time actually passes within the storyworld of the game, independent of the player's actions. Or, in other words, the passing of time within the gameworld does not stop as soon as the player stops acting. This is not quite identical to the fact that non-player characters or other gameworld elements can change or act without input by the player, though the desired experience on the part of the player are similar, and the two are often connected. The most obvious example is the use of an automatic and (within gameplay) unstoppable day and night cycle. Games like *Fallout 3* or *Red Dead Redemption* keep such a continuous intradiegetic clock that the player can look at if she wants, with the effect that the sun sets and rises regularly, even if the player remains standing in one place all the time. Other games, by contrast, will have some quests set during daytime and others during the night (divided by a cut scene or a loading screen), but the time

of day will not change throughout the quest, no matter how long the player waits (even if it is longer than a 'real' day).[54]

Automatic or 'active' changes to the gameworld like this can be experienced by players as narrative events. And though the mere rising or setting of the sun might be rather simple events adding little to the game's narrative proclivity, such timed events can easily become more complex. In *Fallout 3*, the wasteland's fauna changes depending on the time of day, and the traveller is much more likely to encounter dangerous beasts during the night. In addition, shops might be closed or open and non-player characters might be available or gone depending on the intradiegetical time. Features like these are becoming an increasingly important aspect of the creation of the 'living and breathing world' that some narrative games aspire to. An especially strong example for this is the game *Skyrim*.

The inclusion of an intradiegetic clock can (but rarely does) lead to a timed event that is necessarily tied to the gameplay, in other words, a timer that counts back to an event that will have a major influence on the game's objectives, but is independent of the player's action. Though a majority of narrative games creates the *impression* that such a timer exists ('save the world before the return of the evil lord!'), it is almost never existent as a gameplay feature, even in games that have a general intradiegetic clock like *Red Dead Redemption*. More common is the inclusion of isolated timed events that are either started consciously by the player or through an event trigger. Opening a door might, for example, trigger a bomb that will explode after three (real) minutes.

Among the rare examples of an AAA game that is in its entirety independently timed are the *Dead Rising* games. Both are set in a contained environment in which a Zombie outbreak has occurred, and both end with catastrophic events that are not only announced within the storyworld, but that are actually timed in real time. The gameplay of a complete playthrough of *Dead Rising* will always last exactly six hours, a time-span that cannot be changed while playing (it is still possible to pause the game).

54 It is also interesting to note that intradiegetical and real-time clock are aligned, but not identical. In most games, the clock runs much faster, so that a day will take less than an hour. This is an interesting point about the realism/mimesis of video games, as the representation time *seems* to be congruent to our perception time, but in fact it is not. It is debatable whether this concept should also be applied to the intradiegetic space.

2.2.4 Digression: Architecture and Protocols

It is one of our central claims that, for the person playing a video game, the narrative that unfolds is necessarily experienced as a FN, because it contains nodes. The player engages with an architecture that contains rules describing potentiality, but the game – being a video game and therefore predominantly using an audio-visual mode of presentation – also enables the more passively distant perspective on the game as the *representation* of its own performance, or of a run through the architecture. This representation will almost always assume the form of a narrative for the recipient (someone watching someone else – or even herself – play), a narrative that is neither identical with the passive elements of a video game nor with the actively nodal. The architecture is the overall structure of the text, containing its rules, its nodal structure (e.g. tree or network), possible entry and exit points etc. The run is the concrete realization of one possible reading/playing of a FN. A protocol is the perceptible, recorded result, or permanent notation, of the performance, which is by its nature transitory.[55] Or, in other words: The result of the performance is a retrospectively realized narrative, as the nodes have been exploded into events that can be narratively linked – and often are, automatically. This result of the performance can also be represented as a protocol. While text as representation is something that the reader *perceives*, the architecture is something that enables the reader as player to *perform a run*. When performing a FN, the reader/player undergoes an experience. To the degree she links these experiences to a meaningful chain, she narrativizes this experience. This experience is not the same as the FN (being the architectures that includes all the possibilities), it is determined by the individual path that the reader/player has taken through the FN. Depending on the openness of the FN, the number of different runs can be very high (e.g. it could be said that it is virtually impossible to play a video game twice in the exact same way). The FN is in the structure that offers nodes. As every run transforms the potentiality of such a structure into a narrative plain and simple, the result of a run can never be a FN: rather, the run converts whatever openness the architecture holds into something actual and determinate.

A protocol can be used to communicate this experience to someone who is not the performing agent (either a different person or the agent after the performance). Such a protocol is based on the memory of a (narrativized) experience in the mind of the reader/player, but in because it was experienced as such, it

55 This terminology has been chosen as it seems to be more intuitive than the one that Espen Aarseth used to describe a similar distinction between what he calls 'scripton' (that is, the performance of a cybertext) and 'texton' (that is, the script containing the rules).

will take on the form of a uni-linear narrative. The run through an architecture is – temporally speaking, that is, from the perspective of the player – always and inevitably linear. The protocol is what a run through a FN leaves behind as a perceptible (or at least memorable) trace. Because it is solely the transcript of an experience and not the thing itself, the protocol differs from the run through a FN most through the lack of an experience of agency. If the FN does not provide any agency by withholding empowerment, the protocol (the way that the run *looks*) will not differ from the way that the architecture *looks*. This is, for example, the case in films or novels with multiple endings that necessarily show all of their endings. A 'perfect transcript' of the experience of reading *The French Lieutenant's Woman* would be in form identical to the text of that novel. On the other end of the scale, it is obvious that watching a video recording of a playthrough of a video game is vastly different from the experience of playing that game. The protocol is often more easily accessible than the FN itself, since it can be passively perceived instead of having to be actively performed, and it can be recorded non-reductively. Also, it can be more easily represented in conventional forms and media.

There is, generally speaking, no point in presenting an individual performance of a text (if it is read silently) or of a motion picture, alongside the original text, as there will be no variation in the presented. The film or the text looks the same no matter who watches it (barring visual impairments), the individual run does not change its form. This is different with a video game, which is why protocols are discussed here in the first place. In the case of video games, protocols of individual and various runs have turned into an independent genre spanning different media. In order to show how, for video games, architecture and protocol must necessarily be different, one might therefore look at the various attempts to represent games in passive media like print or film. Such representations are commonly called walkthroughs. Walkthroughs are both a convenient way of getting at the narrative within a game as well as exploring non-unilinear paths, and a fascinating new narrative genre in its own right. They are in a sense a re-linearization of video games, though they can themselves also be non-unilinear in structure. Interestingly, it is the older medium of print that is better capable of retaining something of the nodal and non-unilinear structure of video games, and thus of their architecture. Film, on the other hand, is able to provide an almost lossless representation of a video game's protocol.

Online video platforms are full of videos of enacted gameplay of different video games, one can easily find hundreds of hours of this. One could almost describe this as a new narrative genre, one that has links to gaming, visual narratives, and walkthroughs. It is the fixed representation of the performance of a

game, a complete linearization of its potential multi-linearity.[56] The most common form of gameplay representation is the video walkthrough that usually serves the double function of providing information to other players on how to solve certain puzzles or other gameplay challenges and to showcase the representer's abilities. There seems to be a competition for being the first player to present a whole walkthrough. Sometimes, such videos are also commented on by the player. As this activity is becoming more and more popular, recent games like *Just Cause 2* have even implemented a visual capturing device into the game. The PlayStation 3 version of the game allows the user to capture video of their gameplay and either export it to the CrossMediaBar, the console's graphical interface, or upload it to YouTube from within the game.

While most walkthroughs are abstractions of runs, and therefore tend towards being pure protocol, they can also be more experiential, being a representation of one specific run from the perspective of the individual player, including the representation of the activity of playing in the form of an audible commentary by the player. This type has also already developed into its own sub-genre, the "Let's Play" walkthrough.[57] These polyphonic videos contain a doubled narrative perspective, as they show both the game's narrative presentation and the player's commentary. This commentary in turn is both a self-reflexive analysis of the game as game and fiction and turns into its own narrative of a person playing a game.

A further variation of this is exemplified by the "Shamus Plays"-column on the *Escapist Magazine*. Here, the author plays a role-playing game and relates the experience from the perspective of the character. Since the character does not know he is in a game where gameplay conditions determine the storyworld, he is routinely amazed at the nonsensical nature of many of the events and the behaviour of other characters.

Printed walkthroughs, on the other hand, tend to focus much more on commentary of the game's architecture with a reduced amount of direct representation of the game's experiential level, for example in the form of screenshots of cut scenes or gameplay situations, or depictions of maps that are part of the game's representational space. But many of the user-generated walkthroughs available for free on the internet do not contain any of these, but are purely textual. Printed walkthroughs, not least since they are always markedly different from the game's visual presentation, are usually meta-diegetic, they are commentary on the nar-

56 As such, it can also give reason for emergent gameplay, when players act not in the way that is most conducive to the goal of the game, but that is motivated by creating an interesting representation. Emergent representations use the game space to create, capture, and present scenes that do not follow the game's main objective, e.g. doing specific stunts or synchronizing movements.
57 E.g. here: *Let's Play Archive*.

rative and the gameplay, usually in a combination of the player's experiential perspective and the design perspective.

The narrative mode of walkthroughs is very interesting, as it can reveal something about the perceived or real uni-linearity or non-unilinearity of the quest structure. Walkthroughs can be purely imperative, clearly prescribing the one correct option, or rather give a number of options. The walkthroughs for *Fallout 3* and *Fallout: New Vegas* are particularly good examples of conveying the range of options available to the player, but simpler versions can also be differentiated by their restriction to additive commands or their use of conditionals to distinguish between options and different outcomes. Plotlines as well as single events can be rendered purely through written text. This is most common for user-generated walkthroughs and works best with uni-linearly organised games. Continuous walkthrough texts often take on the form of a second-person narrative or a string of commands. Non-unilinear structures are represented in texts especially through the use of 'or' and 'if'-constructions ('you can do x or y' – 'if you have done x then z' etc.). Strongly branching structures like the CYOA structures are increasingly difficult to render in continuous text and often rather rely on graphic representations. Plotlines (especially if they are non-unilinear) can be rendered in the form of graphs or diagrams.

Especially role-playing games rely heavily on statistics to represent the characters' attributes. These are usually extensively given in professionally created walkthroughs. Such statistical data is at the cross-section of mere gameplay and narrative significance, as it not only provides information about specific gameplay options that the character has, but also the narratively relevant way that the player conceptualises the character. The more a gameworld can be openly navigated without clear or obligatory uni-linear plotlines, the less it can be non-reductively represented by texts or even diagrams. Instead, the complex spatial worlds of many recent games create among players the need for detailed maps. Maps (without itineraries) are a completely non-unilinear way of rendering the 'narrative' of a game, and the walkthroughs for open-world games usually contain a large amount of maps.

Regarding outcomes, walkthroughs often distinguish between gameplay and narrative consequences, yet they regularly do not fully represent these narrative consequences. Part of the reason for this is that even though they want to provide helpful information for progressing through the game, they do not want to create what is known as 'spoilers'. But this respect for the player's narrative immersion in the game and interest in the particulars of the game's fiction notwithstanding, walkthroughs often work to de-emphasise the impact of the game's storyworld by providing information about gameplay consequences. This can, for example, render the ethical impact of some moral choices ineffective. Some (especially those

commissioned by the same companies that made the game) try to counter this effect by restricting information and using instead an intradiegetic mode of presentation. The player's experiential perspective is then shifted towards the character's perspective. Strategy guides, especially those published by the same company that created the game, sometimes tend to mix intra-diegetic and meta-diegetic perspectives. A good example of this is the walkthrough for the game *Two Worlds II*. The text continuously describes aspects of the gameworld not as designed (fictional) objects, but as real existents. But at the same time, the text also comments on design aspects that a purely diegetic speaker could not possibly know (such as the number of experience points gained for completing a certain mission).

Interestingly enough, gameplay representations are not only something that happens outside of the game proper, but in a curious case of *mise-en-abyme* also inside the games. The procedural nature of video games allows them to incorporate protocols of (parts of) a run into that very run. The most common form of such an in-game protocol is the quest log of CRPGs. A quest log is a list of quests in a video game, usually a CRPG. More often than not, it lists completed quests as well as active quests (those that have not been started or completed yet). Quest logs take on the form of written narratives, and they are often written in the second person for unfinished quests ('you need to do x') and the first person for finished tasks ('I have done x'). Sometimes they are merely added to, as every important event is being described, sometimes they are constantly being modified. This is for example the case when they reflect uncertainty about events or information while a quest is being attempted. The uncovering of certain hints during gameplay might lead to an entry saying 'x seems to be the case', which, upon confirmation, is turned into 'x is/was the case'. Quest logs of completed tasks always take on the form of PNs, informing about actions and decisions actually taken.

Besides quest logs, there are also other forms of in-game protocols. Some games, like *Just Cause 2*, include a replay function, interrupting the actual gameplay to show a recording of it. As the game encourages players to perform skilful actions that take on the form of hair-raising physical stunts in the gameworld, a recording of such an action is a satisfactory reward for the player, who can even share this snippet of protocol with other players. Some games (especially those that make the reputation of the protagonist a gameplay concern) incorporate mentioning of the player's actions directly into the gameworld: in *Red Dead Redemption* and *Deus Ex: Human Revolution*, the player can buy or find newspapers that will mention and comment upon some of her actions. In the *Fable* or more recent *Elder Scroll* games, non-player characters will comment on the player's actions when she is passing them, and in *Fallout 3*, a radio DJ will constantly tell tales of the protagonist's exploits, along with giving her a nickname or title based on her level and karma.

3 Non-Unilinear Gameplay in Video Games

Through the incorporation of choice, video games easily can (though they need not) become strongly non-unilinear in their design, either through the redundancy of multiple-paths or through de-chronologization. The non-unilinear nature of video games is the fundamental precondition for their ability to produce FNs, therefore it is necessary to take a look at the way and the extent to which games in their gameplay structure are (and can be) non-unilinear.

The non-unilinearity of gameplay can be connected to the two different kinds of rules that a game can employ: rules that state the game's existents, and rules that define the valorisation of options and outcomes, or, as it has been said earlier, rules that describe values that hold in the gameworld. In the case of the game's existents (which also include the options available to the player and the relation of actions to outcomes[58]), the question of (non-)linearity is determined by the player's perception while playing. Uni-linear gameplay would mean that the order in which the player perceives the game's existents is completely fixed. Such a fixing would also mean that the player has no differing options at any point in the game (since such a choice would lead to the perception of different existents). It is therefore obvious that a completely uni-linear gameplay would negate a game's fundamental qualities and is impossible, or at least nonsensical. And yet, as will be discussed later in more detail, there still are vast differences in degree between low and high levels of non-unilinearity in this respect. As to the valorisation rules, as soon as a game has more than one objective for the player to compete, these objectives can also be related in a non-unilinear way.

3.1 Levels of Observation

But before going into the particulars, and in order to make non-trivial distinctions concerning the uni-linearity of gameplay, one needs to differentiate between what one might call different *levels of observation*. By definition, every game provides their players with at least one situation that offers more than one option for action (even if it is merely 'act' and 'don't act'), and consequently, *every* game is at its core non-unilinear, since different options can be regarded as different 'lines'. Indeed, even the simplest games like *Pong, Tetris*, or *Space Invaders*, continuously provide their players with countless choice situations that lead to an almost

58 One should not confuse here the rules that *define* the outcome of an action ('if the player does x, the consequence will be y') with those that *valorise* the outcomes ('y is good').

incalculable non-unilinear complexity. And yet, there seem to be different qualities to the range of non-unilinear options that a game offers, above this fundamentally necessary non-unilinearity. Just as well, when talking indiscriminately about agency on the ludic side and events on the narrative side, the observer will soon run into the problem of how to relate proliferation to relevance. If every interaction carries the same weight, and the result of every interaction is regarded as a narrative event with the same relevance, then the possibility for variations turns out to be close to infinite even in games whose storylines are experienced by players as extremely uni-linear. This is why it is heuristically necessary to introduce levels of observation.

One way to categorise games is by the number of possible game states and the different ways of arriving at these game states that they allow, thereby calculating game complexity, the so-called state-space complexity (the number of legal game positions reachable from the initial position of the game) and the game-tree size (the total number of possible games that can be played). This complexity is lowest in strongly abstract and simple games like Tic Tac Toe, a game that only has nine fields and two different kinds of pieces. But even this game has a state-space complexity of 19,683 and a game-tree size of 255,168. With chess, a game that still allows for only a clearly limited number of positions on a restricted board, the state-space complexity is estimated to be between 10^{43} and 10^{47}, and the game-tree complexity approximately 10^{123}. Video games with navigable space, on the other hand, allow for an almost infinite number of spatial positions alone, together with numerous other potentially changing game states. Thus, their game-tree complexity is far beyond computation. The largest number of these game-state changes however – a step to the right or a jump in an empty room – will bear next to no consequence on the outcome of the game, or even its noticeable progression. In order to solve that problem, it will be necessary to distinguish between different levels that are related, but can be observed independently. Choosing one of these levels of observation simply means ignoring changes on all levels below it as long as they do not have any consequence on the observed level.

It should be clear that such levels of observation are a heuristic tool for making productive statements about a video game's structure and narrative, rather than clear-cut categories that are unambiguously applicable to all games alike. While the lowest level can be easily defined (every state change that is possible throughout the playing of a video game), any abstraction from it is bound to be arbitrary. In-game actions will have to be contextualised according to their consequences in order to see for which level they are relevant. A step to the right might prove insignificant on all accounts – or it might bring the player character into the enemy's line of sight, resulting in his being detected and killed.

Hans-Joachim Backe, in his *Strukturen und Funktionen des Erzählens im Computerspiel* has developed his own systematic account of narrative elements in video games and has attempted to define different levels of observation. Backe distinguishes between substructure, microstructure, and macrostructure. The most concise explanation is given in three questions that relate to these three levels:

- What can I do?
- What should I do?
- Why should I do this?

The substructure designates the potential for all the different actions that a game allows its players (including a breaking of rules as in cheating). It is only influenced by the gameworld and its rules created by the designers:

> Der Begriff Substruktur bezeichnet im vorgeschlagenen Modell den theoretisch unendlichen Freiraum für Spieleraktionen, den jedes Spiel bietet. Die nicht zu leugnende Tatsache, dass kein Spiel jemals zweimal vollkommen identisch abläuft, wird hierin erfasst, inklusive der Möglichkeiten zum subversiven Spiel (dem Ignorieren oder Missverstehen von Spielzielen) und dem Unterwandern oder Brechen der Spielregeln (etwa durch Einsatz von CHEATS). Die Substruktur wird von den Autoren nur durch Regeln und Design der Spielwelt beeinflusst, innerhalb derer der Spieler frei agieren kann. Zeit ist (für das Timing konkreter Aktionen) häufig von entscheidender Bedeutung. (355)

Semantics potentially enter the substructural level in the form of storyworld existents, or, in other words, through the way that option affordances or limitations are presented to the player. A game rule can state, in abstract terms, that a specific piece (like a pawn) cannot move more than one field in one turn, or it can present a world in which one piece is recognizable as a character with real-world attributes like strength or speed that will explain its limit of options. Thus, the rules that constitute the substructural level can communicate themselves to the player as the presentation of existents within the storyworld – walls that limit player movement, keys that open locked doors, the attribute of strength that makes overcoming enemies possible. The substructural level allows the player to perform actions that will be experienced by her as individual narrative events. One should note, though, that at this level, the events can only be linked additively ('He did this, *and then* he did this, *and then* he did this...').

Backe's categories of substructure and microstructure are close to the concept of rules and their semanticization and/or valorisation that is offered in this study (see chapters 2.1.2 and 6.1). The substructure is the level from which the game complexity can be calculated, and it defines the full range of options that a player has at any given moment. What it does not yet contain is a valorisation of the consequences of the different options.

This is what happens on the level of the microstructure, where goals are being assigned to the player. Thus the microstructural level is where games are organised into different units like levels or quests that are both defined by objectives ('reach the end of the level' or 'do this to complete the quest'). Within the microstructure, those rules that define the range of options that a player has at specific situations in the game are combined with valorisation rules. The player is being made aware of the desirability of certain possible outcomes, suggesting to the player that a specific choice of action – or, more often, a series of such choices – is preferable to others who are equally available. Thus, the goal creates the impression of a coherence of a number of actions.

> Mit dem Begriff Mikrostruktur sind die vorgegebenen Sinneinheiten gemeint, die – implizit oder explizit – den Spielerhandlungen Relevanz geben, also ein 'sinnvolles' Spielen erst ermöglichen. Dies geschieht einerseits durch Formulierung von Spielzielen bzw. Zwischenzielen und andererseits durch räumliche oder zeitliche Untergliederung. Diese beiden Einschränkungen des Spielers durch die Autoren treten oft in Kombination auf, sowohl in der klassischen Sinneinheit des Computerspiels, dem LEVEL, als auch in komplexeren oder freieren Formen wie der QUEST. (Backe 355)[59]

Because these units on the level of microstructure are organised as coherent and unified, they have a fixed beginning and end, predetermined by the game's designers. But if one assumes that the beginning of a microstructural unit like a level or a quest is a game state that is predetermined by the game's design, all variations *about the way in which that state is reached* are irrelevant for this level of observation. In a game like *Pac-Man*, where the beginning of every specific new level is identical no matter how often and how differently one plays the game, the only action that matters to each next level is the very last action that completes the requirement for progressing (in *Pac-Man* this is the move through which the player character eats the last pac-dot on the screen), all other actions (the specific way through the maze, the number of defeated enemies, which one of the pac-dots is the last) are irrelevant.

In the same sense, Backe emphasises the fact that microstructural units do not develop randomly out of substructure elements, but are included in the game design's rule system. Microstructural units therefore constitute a considerable reduction of complexity, since any number of game states that can be reached through the combination of substructure elements are defined as transiting to the same new game state that marks the beginning of a new microstructural unit.

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59 This is what Shamus Young means when he writes: "This is what the story is for: To give purpose and structure to the things the player is doing."

> Anfang und Ende einer Mikrostruktur sind durch die Autoren festgelegt, und auch wenn es mehr als einen möglichen Anfang und Ende geben kann, ist ihre Anzahl doch immer endlich. Verzweigungen zwischen alternativen Handlungsverläufen sind hier verortet, wenn sie aus dem (Nicht-)Erfüllen von Haupt- und Nebenzielen resultieren. (356)

One needs to further complicate Backe's system here, though, by additionally distinguishing between different *aspects* of observation. Though the *Pac-Man* example seems to nicely capture the independence of sub- and microstructure, this works only as long as one does not take the game's continuous scoring system into account. If one does, though, substructural actions like defeating an enemy (which increases the score) will have an influence on the next level, insofar as one then has to distinguish between a Level 2' (a game state that includes the score value x') and a Level 2'' (with the score value x''). The two game states at the beginning of the level are therefore either identical or different depending on what one looks at (only the progression of levels, or the game state as a whole including the score). They are only identical when one looks exclusively at the gameplay (in the sense of the objectives, obstacles, and affordances that the player has), because in gameplay terms it does not make a difference.

This distinction is especially important when one is trying to use the concept of levels of observation for meaningful statements about the *narrative* structure of video games as a further *aspect* of observation. Through the inclusion of valorisation rules, the microstructure level is where player actions as narrative events are being related to each other, thus forming the experience of a narrative proper: 'Because I wanted to achieve this, I first did that, but then this happened, and therefore I had to do something else.' Again, communicating such rules (even valorisation rules) as aspects of a recognizable storyworld is something that is optional for a game, though very common. The *Pac-Man* example shows that the one game attribute (the score) that remains as a constant modifier of those game states that mark the beginnings of new microstructure units (the levels) is not perceived as part of the game's (rather reductive) storyworld: as a narrative character, Pac-Man is driven by the need to devour the pac-dots and to avoid his enemies in order to advance to the next level. The score that the player achieves while guiding the player character is of no gameplay consequence, and there is no indication of the player character's awareness of it. Even if the game visually acknowledges that the player has reached a new high score, this will only happen after Pac-Man's death within the storyworld.

Thus, even though no two situations in which the player reaches level 2 will necessarily be an identical game state when *all* aspects are considered, for the state of the game's *storyworld* they are identical, because in this case the score is irrelevant. The Pac-Man at the beginning of level 2 is always the same Pac-Man,

just as he is the same at the very beginning of each game. There is no narratively relevant change noticeable.

This observation is very helpful for considering the relative narrative openness of many games as something distinct from the vast number of options that they provide the player with on the level of the substructure. In contrast to these options, one needs to distinguish attributes of the game state that do or do not change from one *micro*structural unit to the next and relate them to their relevance for the gaming experience (e.g. the score that a player achieves), for the gameplay (e.g. the fact that the player character has lost a life during a level and will have to start the next with one life less), and last but not least for the fictional and narrative significance that the player attributes to them (he might have saved or sacrificed a friend in one level, though that has no consequence on the next level's gameplay). This last step is, of course, highly subjective and completely optional for the game design. But, though it is generally unquantifiable, it is often noticeable. Sometimes it might merely happen within the mind of the player. Having already lost two of three lives in one level, the player might change her gameplay style in the next to one that is more guarded and slow, and apply these changes to her conception of the player character (there is a difference between 'I must be careful now, or otherwise the game will end before I reach the next level' and 'My avatar is low on health, he will be more cautious now').

But narrative relevance can also manifest itself in the gameplay structures, provided they are presented in recognizably semantic terms. The differing end states of a microstructure unit might lead to differing valorisation rules for the next – in other words, different ways of solving a quest might lead to different tasks in the next quest. This often happens when the player has to decide between different non-player character factions. Or they might lead to different narrative presentations as the game's end state (as in the case of multiple endings, e.g. in *BioShock* or *Fallout 3*).

On the other hand, distinguishing the narrative perception of the game from its other aspects also highlights the many cases in which the narrative structure allows for considerably *less* modification than the often complex gameplay or the high degree of narrative proclivity would suggest. A game like *Modern Warfare 2*, for all its visual verisimilitude, grandiose cinematic scenes and immersive atmosphere and pacing, allows not even gameplay modification from level to level and employs a single, linear chain of levels and therefore only one narrative path. The only modifications noticeable concern the gaming experience, the skill with which the player masters the game's challenges, and which can be awarded by the game system through 'trophies' or statistics that are not part of the game's storyworld.

In addition to the substructure and the microstructure, Backe also describes a macrostructure. Such structures give a general semantic coherence to the game as a whole that also relates it to its context. According to Backe, it is especially within these macrostructures that narrative in video games is to be found. Also, narrative macrostructures are increasingly used to raise the question of ethical gameplay.

> Der Begriff Makrostruktur bezeichnet schließlich die Ebene, auf der ein größerer Sinnzusammenhang konstruiert wird. Dies gilt sowohl für narrative als auch für regelbasierte Makrostrukturen wie Ligen und Turniere: die Teilelemente der Makrostruktur, also die in sich abgeschlossenen Mikrostrukturen, bekommen durch die Relation zu den vorangegangenen und nachfolgenden Elementen zusätzliche Bedeutung. Die Makrostruktur gewährleistet somit gleichzeitig eine äußere Rahmung und internen Zusammenhalt zwischen potentiell disparaten Elementen. In narrativen Makrostrukturen werden die Mikrostrukturen auf eine Weise organisiert, die Motivationen für Handlungen schafft und die Hintergründe des Gesamtgeschehens illustriert. Zeit ist hier ein ästhetischer Faktor, kann also je nach Medium in Erzählzeit/erzählte Zeit oder andere Kategorien eingeteilt werden. Verzweigungen, die sich mit denen in Hypertexten vergleichen lassen, d. h. die auf Entscheidungen basieren und sowohl die Hintergründe als, auch mögliche Konsequenzen mit einbeziehen, sind hier verortet. (356)

Backe's conception of the macrostructure is much less helpful than his distinction between sub- and microstructure, which is probably caused by his lack of understanding for the implications of this distinction. The difference between micro- and macrostructure is much less fundamental than that between sub- and microstructure that relates to the difference between a mere stating of existents and the process of valorization, semanticization and ultimately narrativization. It is at the substructural level that single actions are located that can be perceived as narrative events if the game's presentation allows this, and it is at the microstructural level that valorisation starts, and therefore a connection of events into a narrative proper. The feature of narrative divergence that Backe claims for the macrostructure, he has earlier shown himself to be a feature of the microstructure.

The macrostructure can therefore not be much more than a potentially fuzzy perspective on a game's larger structure, one that specifically takes into account how the relation of the different microstructural elements of levels or quests are organised within one game, or even between different games that form some sort of unit. The latter is, for example, the case in the *Mass Effect* games, where the player, after having played one instalment in a way that has led to one of many different endings, can import the information about this specific final game state into the beginning of the next instalment, thus making it possible to start the game from very different narrative states.

While an analysis of the microstructural level can show the existence of bifurcation or modified uni-linearity, the macrostructural perspective can show the degree to which this feature is used in the game. By looking at the number of bifurcations, the relation between parallel quests, or main and side quests, and so on, the macrostructural perspective can also reveal the degree of complexity within a game. This aspect will be dealt with further on in the discussion of quests.

The mechanics of a choice's consequence will also be dealt with in great detail later; at this point it is only necessary to note that one can distinguish between the levels on which a specific action/choice has consequence. Thus, some actions will only have consequence on one of the game's levels of observation. For example, when a player enters a room with two doors on the other side, she can choose through which door to progress. This might have consequence on how the game develops. She can also choose a specific course through the room to one of the doors (straight, zig-zagging, looking straight ahead or continuously looking left and right), but these choices will most likely not influence the consequence of the choice of doors. Their level of consequence is therefore distinct, so that, depending on the level of observation that one chooses, certain choices or actions become relevant or irrelevant. This is how one can, for example, talk about a linear shooter notwithstanding the fact that, taking the lowest level (substructure) into account, no video game can ever be uni-linear.

The concept of levels of observation is also helpful when attempting to differentiate between any form of interactivity and narratively relevant player agency. Human agency is the capacity of human beings to make choices and to impose those choices on the world. When it comes to the narrative potential and structure of video games, agency is an important term that should, for clarification's sake, be clearly distinguished from interactivity. While interactivity in most definitions merely marks the ability to influence something on whatever level, the question of agency as it is here understood weighs on the potential (narrative) *consequence* of a player's decisions and actions. Janet Murray has used the term agency in this sense in her concept of interactive storytelling. For her, "[a]gency is the satisfying power to make meaningful action and to see the results of our decisions and choices." (126). The important term here is of course 'meaningful'. The pure existence of interactivity tells us nothing about the significance or meaning of the actions that it entails. It is therefore a much too broad concept to give an adequate description of what video games are capable of as a ludic narrative medium. As Murray writes: "Because of the vague and pervasive use of the term interactivity, the pleasure of agency in electronic environments is often confused with the mere ability to move a joystick or click on a mouse. But activity alone is not agency." (128). When dealing with the narratological implications of player choice, we will

therefore need to investigate how and to what extent the player experiences them as meaningful in relation to the fictional world of the game and consequently as narratively relevant. Additionally, we will have to distinguish between forms of non-unilinearity that are based on video games' general use of interactivity and substructural options, and non-unilinearity that applies only to a higher level of observation and is experienced as narrative agency. In other words, the player can do a lot of different things which will not significantly change the story she experiences.

3.2 Non-Unilinear Existents

Video games can be regarded as game systems consisting of a number of existents. Most game rules are concerned with stating these existents, which can be game spaces (such as a board or a field on which a game is played), aspects of the game space (its size, its subdivision into different zones with different functionality), agents within the game space (such as the pieces of a chess game or non-player characters in a video game), but also the options available to the player in any given situation as well as the consequence of each action. All of these three aspects of the game's existents, its materiality, the player's options, and the consequences of actions, can be questioned as to their uni-linearity.

To start with the consequences, one can say that most games are strongly uni-linear in this respect. Games usually state unambiguously what the consequence of a specific action in a specific situation is. Deciding to move a piece on a board will result in exactly that move, and if another piece has already occupied the space to which the piece is moved, then the game might state that the earlier piece is necessarily to be removed from the game. The only ambiguity that games allow in this respect is the introduction of probability.[60] In physical game systems this is made possible through the inclusion of dice. In a pen-and-paper role-playing game, for example, a player might decide on an available action, such as fighting an enemy, and a role of the dice will influence the outcome of the fight. Note that this is different from a dice role in *Monopoly* that decides how many fields the player must advance. In the role-playing game, a decision is made (from multiple options), and the dice influence the consequence of the decision.

60 Though a completely arbitrary connection between a player's choice and the consequence of this choice can be imagined, it would pretty much defeat the purpose of the game. Also, in order to be truly arbitrary (and not only very improbable), the game would need to provide an infinite amount of possible consequences, which in itself is impossible.

In *Monopoly*, the dice are a means to derive a prescription for the player's next movement.

In *Monopoly*, the player's movement is therefore not an area that offers her any options, it is completely prescribed, though not predetermined (because based on chance). And yet the game does offer its players multiple options in other areas, as each player can in turn decide on how to spend their money. Concerning player's options, it is surely not too far-fetched to claim that every game, in order to qualify as a game, needs to give its players more than one option at least in one situation. One might think of a 'game' in which a number of fields are arranged in a straight line. The player starts with her piece on the first field, and is allowed/forced to move one field with every turn. The 'game' ends when she has reached the last field. Though this would be a uni-linear experience, it would certainly also be a frustrating one, and would hardly be accepted by anyone as a game, even if it contained a number of elements usually associated with games (a board, a piece, and rules). Games are therefore always non-unilinear in the area of player's choice.

Which leaves the third aspect of a game's existents, its materiality, the objects and spaces of which it consists. In a playthrough, the player experiences a game's existents, an experience that can be made both through sense perception (she sees the board and the pieces in front of her, or the visual representation of the game space on the screen) and as a mental activity (she learns about the game space and/or her options in a situation). The question regarding the game's relative uni-linearity or non-unilinearity concerning its materiality then is concerned with the ordering of the experiences by the game system. If the order in which the game's existents, or at least some of them, are experienced is prescribed by the game, it is uni-linear in that respect. Given what has been stated about the necessary non-unilinearity concerning player options, it follows that in this regard, too, one can presuppose at least some non-unilinearity: whenever the player has more than one option, it also means that there are at least two possible orders for the player to experience the game's existents. In our earlier example of a unilinear (non-)game, the order in which the player experiences the game's existents (the different game states that record that the player is in the first field first, then in the second, then in the third and so on) is also uni-linear. But if the player is allowed to move forward *and* backward whenever possible, there is already more than a single sequence of game states.

This example already touches upon the most important aspect of how games can order the sequence of the player's experience of existents, or on the contrary allow for great freedom: the player's options that have to do with spatial configurations, and especially the player's position within the game space. This aspect has become predominant in video games because of their recent shift towards a visual perspective that is dependent on the player's position within the game

space. Previously, games that contained avatars – that is, that dissociated the player's physical body from her presence in the game[61] – usually provided a fixed and often complete view of the game space. The player looks at the complete board, and changes in spatial configurations (such as the movement of pieces) will not result in a change in the player's perspective. This is also the case with many early video games, for example *Pong*, *Space Invaders*, *Donkey Kong* or *Pac Man*. In all of these, the player's perspective is fixed and independent of her avatar's movements. This changed decisively with the introduction of three-dimensional rendering, which led to video games' extensive use of material space.

Material space in video games is a game space that is modelled on physical space and that is graphically represented on the screen and thus can be experienced by the character. This representation is what differentiates it from the more general concept of game space. Thus, while a game might construct the idea of a physical game space in the minds of the players, if it does not represent this space in any way, it does not contain material space. An example for this would be the purely text-based early adventure games like *Colossal Cave Adventure*. But since the creation of material space is one of the things that computers excel in, it has become a staple of video games once their processing power got strong enough. Ever since the revolutionary advent and success of the game *Doom* in 1993, video games have come to be dominated by 3D first- or third-person games that create material space. In most cases, the game allows the player to navigate this space, which can then also be called navigable space. In navigable space, the player has the freedom to change the player character's spatial position within material space, that is, she can make the player character move in different directions.

One major consequence of the introduction of material space was that game spaces routinely became far too large to be perceived by the player and her limited perspective all at once.[62] This makes not only the experience of spatial configuration (the player's piece can be seen on field x instead of y) non-uni-linear, but the actual sequence in which *parts* of the game space are perceived *for the first time*.

The sequential perception of the game's existents in material space is independent of the player's ability to decide where to move to, or the degree of freedom that the player has concerning her spatial movements. But most video games do emphasise this freedom, and a game's conception and application of spatial choice is an important, if not the most important indicator of its non-uni-linearity

61 All real-life sports games actually embody the player within game space, which means that her perspective is limited and dependent on her.

62 Overlarge game spaces in this sense are older than the advent of 3D rendering, since they were introduced through scrolling mechanics and visually presented scene shifts, but their immersive effectiveness is best achieved through 3D rendering.

concerning the game's materiality. Players of games that contain navigable space usually navigate 3D environments, the path through which is sometimes fixed (as in a rail-shooter) or suggested by the game. But more often, the decision where to go is left to the player. Sandbox games in particular highlight this freedom of spatial choice. Indeed, spatial choice is the most common and the most frequent choice in all video games that use navigable space, as virtually every movement of the player character constitutes a spatial choice. The range of consequences of these choices can differ dramatically, though.

Theoretically, spatial choice is the freedom of an agent to move in any direction. In practice, this choice is almost always restricted. In real life, there are physical forces like gravity and impermeable physical objects like walls that restrict total freedom of movement. And though games need not follow these restrictions (they can have characters fly or be able to move through solid objects), they usually restrict spatial choice even stronger than does real life. Depending on the level of abstraction, sometimes players are allowed only a very limited set of 'moves', as in chess or grid-based strategic video games. In these cases, the number of possible spatial choices at any given moment is finite and low enough to be known in its entirety. These games are often turn-based as well, meaning that movement is further abstracted from the time it takes to perform the movement, and that simultaneous movement by two agents is impossible.

The spatial choice within navigable space usually contains a vastly higher number of different choices at any given moment than the more abstract variants. Though these will, due to technical limitations, not be infinite, their number will still often be too high for the player to even consider in their entirety, especially since in these cases movement usually happens in real time and simultaneous movement is possible. The player will simply not have enough time to consider all her options before moving.

However, the higher number of options often comes at the price of lowered consequence, at least concerning the direct relation between individual spatial choice and consequence. The consequence of spatial choice cannot be given on a fixed scale, as it is highly dependent on the design of the material space: The choice to walk through the left door instead of the right one might have a significant consequence, while the difference between walking in a straight line through one door or at a slight angle might be negligible. But even the choice of doors might be irrelevant if they both lead into the same room. On the other hand, the angle might be important, as it might lead the player character into a trap on the floor, or save him from it. A major aspect of the consequence of spatial choices is the question of reversibility. Generally speaking, reversibility reduces the consequence of spatial choices, though it does not eliminate it, at least in those cases where there are other agents within this space.

But even those games that have material space do not all allow for the same degree of freedom of movement. Some game spaces might be designed similar to a long (and possibly winding) corridor that can be traversed only in one direction, thus forming a unicursal labyrinth (a good example is, with the exception of one level, the game *Final Fantasy XIII*), and some go so far as to completely restrict the player's range of movement. The most extreme example of this is the genre of the rail-shooter. The player is virtually put on rails, with his goal being to aim his gun within the screen and shoot at things. A typical example of this genre is *House of Dead – Overkill*. The rail-shooter is an interesting (because extreme) structural case, especially as regards the use of space, uni-linearity, and narrative proclivity. Rail-shooters also use 3D spaces that are being navigated by an avatar, but unlike most video games, the player is unable to control the avatar's movements, they are pre-scripted. This results in an unusual degree of uni-linearity. As a secondary result, it can also result in a high degree of narrative proclivity, since dialogue and events can be scripted directly into the gameplay.

A game like *House of the Dead* makes it very clear that there is only one story in the game that can be followed through or be interrupted. It does not contain any narratively represented failure ending (however thinly). Instead, when the player character has died, the player can always return to the game at the exact same spot, at the cost of half her score. Rail-shooters are only the most extreme example of a game design that limits the player's spatial choices and linearises the perception of space. Many first-person shooters, though they allow the player to move back and forward and so on, do not contain any discernibly divergent paths. Considering games which do not present material space, automatically scrolling games like shoot'em ups[63] are strongly uni-linear, as is the progression of different spaces in many platformers or puzzle games.

Such uni-linear spatial design also has the clearest distribution of what one could call spatial desirability. Spatial desirability is connected to the fact that games have objectives, which means that some spaces are more desirable for the player character to be in than others. Since games like platformers, shoot'em ups or even first-person shooters focus so strongly on the player character reaching a certain point in space and indeed identify this point as the game-winning state, this part of the material space constitutes an unquestioned and unambiguous desire for the player. In a completely uni-linear level design, there is no reason for stopping or turning back, a fact that is underscored most succinctly by the forced

63 In a shoot'em up, the player usually looks from above on her player character (most commonly in the form of a spaceship). The spaceship is constantly moving forward, but since the perspective is relatively fixed on it, the traversed space is actually moving from top to bottom or left to right, and the player has no ability to influence that movement.

scrolling that some games feature. In such games, the player might for example look down on the spaceship she is controlling, a spaceship that is in a constant forward movement. As the visual focus remains fixed on the spaceship, it appears as if the ground is moving below it. In the more restricted examples, the player can only move the spaceship to the left or right (in order to take aim or to avoid incoming obstacles) but has no influence on the forward movement. Thus, the 'desire' to move in a certain direction is already hard-wired into the game system, as is the definition of a point in space that marks the completion of the level and thus the culmination of that desire.

In a less uni-linear fashion, the spatial setting of a level can also allow the player to choose between multiple, yet clearly distinctive paths that eventually lead to the same end-point that marks the progression to the next level. These spatial variations can be very basic and low-impact, like walking left or right around an obstacle such as a statue, or they can be very elaborate, leading to a completely different playing experience.

Since the main motivation of navigating such spaces is still to reach the point of level transition and progression, there is still a clear hierarchy of spatial desirability between the starting and the end point, though there might be more ambiguity as to the desirability of the specific path taken. In *Fallout 3*, the player character's search for his father will take him deep into the ruins of Washington, D.C., but it is up to the player whether she wants to reach them by crossing the open wasteland or going through the tunnels of the wrecked subway system. Both paths that can take hours to complete contain their own dangers, obstacles and rewards, as well as different possibilities to get sidetracked by chance encounters with non-player characters that are the givers of diverse side quests. The simple spatial choice to go underground or to remain above therefore will lead to very distinct experiences, even though the spatial position that will eventually be reached is identical. In the first-person shooter *Gears of War 3*, on the other hand, the player follows an overwhelmingly uni-linear path through carefully scripted enemy encounters, but will eventually reach points where the game gives the player a spatial choice in the sense of "Do you want to go to the upper or the lower deck?" As much as this decision is signposted, though (the game even pauses the otherwise relentlessly non-stop action until the player makes her decision), it is of only limited consequence, as the two divergent paths will rejoin only minutes later.

If the different spatial paths that the player can take through material space are not even clearly distinct anymore as a number of finite options (upper or lower deck), if there is a low level of restriction of where the player can physically go, and a lowered hierarchy of spatial desire, one often talks of a sandbox design. Sandbox games do not have a progressive level structure; they present only one

material space that is to be understood as continuous. They can contain different sub-objectives, but these will be distributed in a non-unilinear spatial and not a sequential progressive way.

On a technical level, a sandbox design also usually means that the game space is not divided into discreet units that, when entered, disrupt the game with a loading screen. This heightens the player's perception of a continuously expanding and navigable space. Sometimes, though, there is a distinction between exterior and interior spaces. In *Fallout 3*, for example, entering a building will always prompt a loading screen, while walking through the vast wasteland is experienced as continuous.

Therefore, the sandbox design does not have such a clear hierarchy of spatial desirability as have more uni-linear designs. Instead of declaring a specific part of the space as the most desirable to be in, sandbox gameplay takes a more quantitative approach to the desirability of spatial experience, rather defining as a desirable goal the number of places that a player explores: the more the better. Spatial exploration is suggested as an inherently pleasurable activity. As such, and because of technical advances in game design, it is becoming an ever more important feature in many recent games that they are using different ways to reward the player for exploring.

With the increase in computing power and consequently the visual quality of the presented, the visual stimulus of well-designed environments itself has become an important reward for spatial exploration. Players increasingly navigate the game's material space simply in order to see how it looks, and to enjoy the scenery. There are countless games that emphasise the sheer visual beauty of their gameworld's scenery. This scenery can either tend towards the fantastic and even the surreal (*Dragon Age, American McGee's Alice*), or towards a faithful recreation of historical spaces, such as in the *Assassin's Creed* games, where the setting is 12th-century Jerusalem and 14th-century Italy, or the 1940s Los Angeles of *L.A. Noire*.

Another important feature that emphasises spatial exploration is the ease of movement that the game provides. Just like all game rules, the rules that constitute navigable space provide both affordances and limitations. They create the possibility of spatial movement in the first place, but they also set limits to that possibility. As has been stated, visible space (the space that the player can see as physically present) is often substantially larger than navigable space. The player might be able to see large mountains on the horizon, but not be able to reach them, as upon trying she will reach an invisible wall. Since such invisible walls are considered immersion breakers, game design often tries to legitimise them diegetically, by surrounding navigable space with unclimbable cliffs (*Red Dead Redemption*), an ocean (*Myst*), or magic barriers (*Gothic*).

But even within navigable space, freedom of movement is usually not unlimited, since there are physical obstacles like buildings, walls, or rivers that structure it and limit movement. In *Fallout 3*, for example, it is almost impossible to overcome any physical obstacle by crouching or climbing, and the player usually has to find a way around instead. But the trend towards spatial exploration has led to a number of games that increase ease of movement by enabling the player character to climb physical objects, leading to what has been called vertical gameplay. Examples are the *Assassin's Creed* games, the *InFamous* games, *Prototype*, or the *Just Cause* games. All of these features strongly deemphasise any uni-linearity in the spatial design, by enabling the player to virtually go everywhere. The extreme spatial non-uni-linearity of sandbox games can concur with a non-uni-linear emphasis of the game's narrative, as in the *Fallout* games and, to a lesser degree, in *Red Dead Redemption* and *Grand Theft Auto IV*, or it can rather highlight the division between a strongly uni-linear main quest chain and largely unconnected open world side quests, as in the *InFamous* games or *Prototype*.

Finally, one should note that though the relative limits of spatial freedom and therefore the degree of spatial uni-linearity is always fixed by the game's designers, by now a whole gaming sub-culture of emergent playing bent on circumventing such design has developed, with players trying to find paths through the game that were not intended by the creators. This activity makes use of programming oversights or glitches, and is called sequence breaking; it became popular with the game *Metroid Prime* in 2002.[64]

3.3 Non-Unilinear Objectives

So far, we have looked at the non-unilinearity of a game's existents, that is, everything that is described by the rules as a given part of the game design. But there is also a second set of rules, here called valorisation rules, that define a game's objective or objectives. A game that only has a single objective is completely unilinear in this respect insofar as for every initial game state, there is only one final game state that is desirable, namely the state when the objective has been met. Minimally, games will still allow a degree of non-unilinearity through the option to fail (the 'game over' state), but ever since arcade games enticed their players to continue a failed game by inserting another coin, games have mostly treated the 'game over' state as unacceptable, leaving just one acceptable and therefore uni-linear course of action in the minds of players.

64 Cf. Miner; for more information on sequence breaking, also cf. "Sequence Breaking", *TVTropes* and "Sequence Breaking", *Wikipedia*.

But as games have grown in complexity, so have the objectives they give to their players. In many games, objectives have become so complex that they are divided into sub-objectives, and often enough a game will offer more than one objective that cannot be completed at the same time.[65] Therefore, another possibility of structuring gameplay uni-linearly or non-unilinearly is determined by the existence of multiple gameplay objectives, and the connection between them. Most of what Jesper Juul has called 'games of progression' arrange the objectives in a consecutive and dependent order. The player gets one objective, after the completion of which she gets a new one, until the final objective is reached and the game is won. This consecutive structure is most well-known in the form of a series of 'levels' that the player needs to finish, cross, win, or survive. The roots of this structure can be seen in arcade gaming, where it enabled a finer balance of reward (by finishing one level, the player gets the feeling that she has 'won something') and challenge (the game has not yet been won, and probably never will be).[66] While the consecutive structure is uni-linear, games have other ways of arranging multiple objectives.

A very common structure is to give the player a number of objectives that must necessarily be completed, but to leave the order in which they are attempted up to the player. A very simple example are music games like *Guitar Hero*, which task the player with 'finishing' a set list of three to five songs (that is, successfully completing all of them) in order to progress to the (literally) next stage, but place no restrictions on which songs the player wants to play first.

In its simplest form, there is no gameplay penalty or reward for any of the possible sequences. Looking at the state of the game, there is no difference at all between the different sequences with which one can engage a set list in *Guitar Hero*.[67] In a more complicated structure, the order might be left entirely to the player (in the sense that a dominating general objective can be reached with *all* of the sequences), but different orders will influence the way that the different objectives can be engaged. These influences can either affect the player character, or the storyworld, or both.

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65 One could argue, for example, that Tetris has more than one objective ('staying alive' by completing rows and maximizing points by trying to complete more than one row at a time) but the player works at these two objectives simultaneously, there is no way to choose one above or before the other.

66 Even games without perceivable levels often contain the element of progression through the inclusion of a gradually increasing score. Nobody would have played a single-player arcade game without any sense of progression. At the same time, early arcade games often were not made to be ever completely finished. *Pac-Man* was designed to be played endlessly, though a programming error meant that the game would effectually end after 255 levels.

67 The aspect that is being ignored here is the player and her ability to change and learn. After having played four songs in a five-song set list, the player will have practised the core game mechanics, and will succeed in finishing the fifth song with more ease than if it had been the first.

Especially in CRPG, one aspect that is almost constantly changing is the player character, or rather, the player character's attributes. Their most common gameplay mechanic, that of collecting experience points, means that most actions the player character makes (such as fighting or exploring) will gain him experience points that can be transformed into character attributes such as strength, resistance, or speed. This means that the order in which different tasks are completed will have an influence on the state in which the character and his attributes are when a specific task is being attempted. A task that is tried early will be done with a relatively 'weak' character, which might make it much more challenging than if it had been attempted as the last task in a series.[68] The character might even acquire an object or a skill while completing one objective that will enable him to complete the next objective in a completely different way than if it had been the first.

On a less procedural and more narratively scripted level, the order can influence the narrative state of the gameworld. This type is less common in quests that are related under a single general objective, but is increasingly found in the interaction of side quests. Generally speaking, side quests can also be approached in any order by the player, but in games like *Fallout: New Vegas* or *Deus Ex: Human Revolution*, their events are often interconnected to such an extent that having completed one specific quest (A) before another (B) will significantly change the state of the storyworld when (B) is being started, and consequently the way that the quest unfolds. While it could have been possible to complete (B) before (A), the order (A) (B) leads to a modification of (B) to (B)'. In *Deus Ex: Human Revolution* this is constantly the case: often, the player will encounter secured doors. Depending on whether she has played certain quests before the quest in which she encounters the door, she will have acquired a key code or not, sometimes forcing her to seek out alternative routes if she has not. For *The Elder Scrolls IV: Oblivion*, a game that has far more side than main quests, detailed suggestions can be found on the internet as to the preferred order in which to engage quests, not least because of their influencing each other.[69] And in the next instalment of the series, *Skyrim*, the player can choose to join one party in a civil war that runs parallel to the main quest line. The decision to side with one of the civil war factions will have a major influence on the development of the storyworld and therefore also on the way that some (even main) quests are to be completed.

A borderline case are games that do not have any objectives at all, because in some views, the absence of objectives would deny these games the status of game.

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68 Some games try to counter this effect by having the challenges automatically rise with the attributes of the character, a technique that is called adaptive difficulty. Thus, for what is technically the same task, a strong character will meet strong obstacles and a weak character weak ones.
69 Cf. "Oblivion: Quest Timing".

In Roger Caillois' terms, they would rather fall under the category of *paidea*, as opposed to *ludus* games. Caillois does not see these categories as strictly distinct, they rather form different ends of a continuous scale. While *ludus* is marked by structure based on rules and objectives, *paidea* is unstructured, unplanned, spontaneous and without any clear goal but the enjoyment of its very activity. The two extreme ends of the spectrum hardly ever exist in their pure forms: there is a tendency to establish rules and goals for *paidea* activity (as for example playing in the sand becomes a competition in achieving sand-castle height, or when individual territories belonging to the players are defined and fought over), just as there is a tendency to infuse the strictness of *ludus* games with elements of *paidea* (introducing 'style' into sports where this is not part of the rule system, stopping to enjoy a beautiful scenery in a video game[70]).

Paidea in its pure form is by definition non-unilinear, as the absence of any rules makes hierarchizations and chronologization of different steps impossible. Its principle unpredictability is one of the distinguishing features of *paidea*, aligning it also to human creativity. It is this that makes it hard to categorise such games or activities in terms of (non-unilinear) narrative potential, because it can be either regarded as devoid of narrative proclivity, if one understands narrative as the description of purpose and causal necessity; or it can be identical with the very creation of narrative. In this sense, an empty page and a pen (or a word processer and a new document) could be seen as a *paidea* 'game system' that would – among innumerous other things – allow for the creation of narrative.

Though largely defined and dominated by agonistic structures, video games have also developed a number of examples that are not objective-driven and can be seen as a clear expression of paidic play within the structure of a game system (and not simply a blank sheet of paper and a pen). Their extraordinariness within common game design is highlighted by the fact that they are often referred to as non-games. According to Wikipedia,

> non-games define a class of software that lies on the border between video games, toys and applications. The original term non-game was coined by Nintendo president Satoru Iwata (Casamassina). The main difference between non-games and traditional video games is the apparent lack of goals, objectives and challenges. This allows the player a greater degree of self-expression through freeform play, since he can set up his own goals to achieve. Non-games are particularly successful on the Nintendo DS and Wii platforms, where a broad range of Japanese titles appeal to a growing number of casual gamers. Non-games have existed since the early days of video games, although there hasn't been a specific term for them. ("Non-game").

70 As the last example shows, *paidea* can be closely associated with the explorative attitude towards nodals.

The article continues to cite a number of examples, from Jaron Lanier's *Alien Garden* (1982), which featured a special 'ungame mode' called "Doodle City", and Jeff Minter's *Psychedelia* (1984), to the extremely popular simulation game *SimCity* that was called a software toy by its creator Will Wright, or the more recent *Wii Fit* game, in which players can perform a number of work-out exercises with at least no clearly defined objectives. Most of these games are either creative and constructive (*SimCity*), or value an activity purely for its performance (*Wii Fit*), and therefore rarely force any order or hierarchy between individual acts. They are usually highly non-unilinear, even if they can contain an impression of progression as does *SimCity*, where the player builds a simulated city that continuously grows and evolves. It is this sense of progression that can introduce ludic or even agonistic elements in a game like *SimCity*, because paidic games like this are always subject to the inclusion of additional valorisation rules, for example if the player starts the game with the express wish to build a city that is larger than the one she built last time.

Open-ended gameplay can be seen as a variation of the paidea-type of 'no objectives' when it is applied to games that do have goals and objectives, but that allow a continuation of gameplay after these objectives have been successfully met. Such games are open-ended in that the end of the main objective does not provide gameplay closure, potentially echoing the fact that no narrative closure is ever completely final (in the sense of the meaning ascribed to the narrative, which is always open for interpretation). One should not confuse this with those Sisyphean games that set an objective which has no possible win state. There is, for example, no end to the game of *Tetris*, the speed and the score might simply increase infinitely.

Open-ended gameplay is also not identical to non-unilinear gameplay, since there is a distinction between gameplay that allows many paths through a narrative to one (or several) conclusion(s), and gameplay that has no fixed endpoint, no telos that could be achieved to completely end the narrative arc. Most actual cases do contain a narrative telos in that they set the player a number of tasks constituting a main quest, the completion of which equals a 'solving' or 'beating' of the game, but then allow the player to continue playing. In this case, there is simply put a possibly perfectly uni-linear narrative that is followed by the absence of a commanding objective.

One should also not confuse open-ended gameplay with an open-ended narrative. In the case of narratives, the open-endedness is usually achieved by ending narration *before* the end of the narrative arc, whereas in open-ended gameplay, the game continues *after* the narrative arc has come to an end. Whereas an open form is fairly common in modern narrative, so far there does not seem to be a single video game (at least from a commercial publisher) with a similarly open

ended narrative – it would have to be something like having the game automatically end as soon as the player enters into the final boss battle. In current practice, the degree of open-endedness of a game more or less corresponds with its lack of narrative proclivity – *Tetris* being a case in point. It seems that, as soon as the game designers introduce narrative into a game, this is used to motivate the player to strive for closure.

Still, there are newer games that combine narrative with open-ended gameplay, but only by differentiating the more tightly structured narrative of a main quest chain from non-unilinearly distributed side quests and the even more spatially structured narrative potential of a sandbox world. In a game like *Skyrim*, the main quest chain (after the completion of which the game can be continued) provides only a fraction of the quests available in the whole game.

Looking at the relation between main and side quest, the difference between open-ended and closed gameplay lies in the question of whether side quests are still available to the player after the main quest chain has been completed. In *Dragon Age*, there is a point of no return in the development of the main quest chain, from which the player can only continue towards that chain's closure. Interesting examples in this regard are the newer *Fallout* games. The original release of *Fallout 3* featured an end to the storyline in which the protagonist is killed, disabling all possibilities of continuation. Yet there was so much resistance among players against this ending that the company released the 'downloadable content' (DLC) *Broken Steel*, an addition to the existing game. When the player purchases and installs *Broken Steel*, there is a new choice at the end of the last quest of the main game that does not involve the death of the protagonist and thus enables an ongoing gameplay.[71]

Many sandbox games like *Prototype* also enable the player to continue after the main storyline has been 'won'. After finishing the main mission of this game, the protagonist is back in Manhattan with the task of completing all side missions. Yet the narrative content of what the player can experience in these side missions is comparably low and almost exclusively dependent on the player. The same is true for the Japanese CRPG *Final Fantasy XIII*, though this game uses a curious method to combine its highly teleological and uni-linear narrative with the option for open-ended gameplay. The main quest chain of this game leads to a definitive end in which some of the main characters die and which does not nar-

71 This seems to be much more appropriate to the game's general structure, since the main quest chain is actually shorter than the combined side quests, and even after these, the game has not only extensive DLC, but also countless places to discover that are not part of either the main or the side quests. Still, with the new instalment in the series, *Fallout: New Vegas* there is again a definitive end after the main quest chain.

ratively allow for continuation. But the player is then automatically taken back to an earlier narrative state of the game, with the difference that the character attributes are not reset, so that the player does not loose gameplay progression. In a sense, the storyworld is reset, while the game state is not. The area the player is returned to is one where she can encounter numerous enemies that had been too difficult to defeat before beating the game, but that can now be tackled at will.[72]

While *Final Fantasy XIII* is an example of how open-ended gameplay can be enabled at the cost of a coherent presentation of the storyworld, other games have started to reflect more successfully on the significance of narrative closure and continuation. In *Red Dead Redemption*, though the story is conclusively resolved at the end of the main quest chain with the death of the protagonist, the player can take over the role of the protagonist's son and continue to explore the game space. As the game had been largely concerned with the question whether a man could free himself from the consequences of his previous actions and make a new start (finally answering it in the negative), making the player continue as the son of the player character and providing him with the option to revenge the death of the player character's father (or not) provides an interesting situation.

In an even more obvious play with player expectations about gameplay objectives and their closure, *Fable III* ostensibly gives the player a clear long-term main objective only to reveal after its achievement that the game is still far from over. In this game, the player acts as the sibling of a tyrannical king, slowly starting a rebellion against this king by enlisting the help of different factions. At one point, the player can actually start the rebellion and defeat the evil king, and become king or queen in turn. But the game does not end with a happily ever after at this point; instead, the tyrant explains that there were ulterior motives for his cruel behaviour (a world-threatening event against which the kingdom needs to be prepared with money) and leaves it up to the player to henceforth act as ruler. Thus, the game suggests the transition from the mode of a Shakespearean comedy, in which the narrative arc invariably ends with a marriage, to the modern novel's rather less festive exploration of what it actually means to be (and try to stay) married.[73]

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72 This is a further testimony to how strongly this game differentiates between narrative and gameplay. By unceremoniously (and improbably) bringing the player back to a point before the narrative closure and setting her in a game space with extremely high gameplay challenges and low narrativity, the game switches modes in a way that cannot but devalue the striving for closure.

73 A similar structure had already been used in the first *Fable* game, which therefore "offers the unique opportunity to experience first-hand what it means to 'live happily ever after' (needless to say, this mode of existence is mind-numbingly boring)." (Kücklich)

4 Non-Unilinear Narrative in Video Games

Before specifically investigating the potential of video games for non-unilinear narration, one needs to define the concept of non-unilinear narration in general terms. First of all, one needs to distinguish sharply between non-unilinear narration and mere a-chronological narration: The question of *chronology* is concerned with the relation between the order in which events in a narrative happen and the order in which they are represented. In chronological narration, both orders are identical, in a-chronological narration, they are not. The movie *Pulp Fiction*, for example, is highly a-chronological, though not non-unilinear in the way the term is used here. The movie shows, one after the other, seven narrative sequences (one of which is further divided into a flashback and the present), which, when re-arranged into the chronology of the movie's storyworld, would be ordered 4a, 2, 6, 1, 7, 3, 4b, 5. And yet, the fact that such a reordering is possible shows that the narrative itself is uni-linear. A-chronological narration can be recognised because the narrative gives enough information about the causal and temporal connection between events for the reader to reconstruct the right chronology in her mind and compare this to the order of representation. Part of the fun of watching *Pulp Fiction* lies in this mental activity of recognizing the a-chronology.

The question of *uni-linearity*, on the other hand, is concerned with the *possibility* of returning to chronology, either in terms of the events or their representation. This means that a narrative is only non-unilinear when either the events cannot be reconstructed into a chronology, or their representation cannot be turned into an unambiguous sequence of perception. Most definitions of uni-linearity confuse these aspects, though, such as the one on Wikipedia ("Nonlinear narrative").

One has to further differentiate between story and narration with regard to non-unilinearity. If story is understood as a sequence of causally connected events depicting a logically possible world, then Yatzeeh is right with saying "non-linear stories don't and will never exist no matter what anyone tells you" (Croshaw, "Extra Punctuation. Scribblenauts"). Still, even disregarding the depiction of non-realist worlds, there is non-unilinear narration. This narration works as a script, and the (always uni-linear) story is one of its possible performances, or one actualization of its potentiality. Thus, non-unilinear narration often generates more than one (linear) performance, or what Yatzeeh terms rather idiosyncratically 'story'.

FNs are always non-unilinear in the sense that at least at one point they provide a minimum of two options for continuation and therefore two 'lines' of narrative. This point we call the 'node' and the situation that the user of a FN finds himself in when encountering a node is a 'nodal situation'. In contrast to a mere

shift in chronology, a node is defined as a situation that allows for more than one continuation. For more on the general specifics of nodes and the general distinctions between different types of nodes, cf. Bode 1.5–1.8. In the following, we will deal with all of these specifics and distinctions, but with an exclusive focus on how they function in the context of games and video games in particular.

As we have seen when looking at gameplay, all video games incorporate a basic model of non-unilinearity by allowing the player at least once a choice between more than one option, otherwise they would not qualify as games in this sense. And since we have also established that players and games strongly tend towards semanticizing the existents of games, presenting or understanding them as having a meaning in a fictional storyworld, it is obvious how most of the choice situations that players encounter in games can be regarded as narrative bifurcations, as multiple continuations in the sense of FNs. So all games that allow their players to perceive the game's existents as fictional entities and the game events (changes in the game state) as narrative events are also FNs. But when looking at the vast variety of game structures and gameplay designs, one notices that there is an enormous range when it comes to the degree to which a video game is open, especially when considering the relation between the gameplay's non-unilinearity and its narrative. This range covers the whole spectrum from a game like *Final Fantasy XIII* that tells an almost completely uni-linear (though highly complex) story with minimal player agency concerning the plot (though there is a high level of agency concerning the gameplay), to a game like Jason Rohrer's *Sleep is Death* that is played by two players who collaborate on telling a story, where one takes on the role of the player, the other the role of the gamemaster, designing the surroundings and the rules in a dynamic reaction to the player's choices.

Video games are dynamic systems designed for interaction, but, as has been discussed earlier, as a meta-medium they are also capable of incorporating passive presentational forms of other media such as film scenes, voice recordings, or passive text. While the later part of the chapter will deal with the implementation of non-unilinear narrative into the game's structure, it must also be noted that the multiple continuations to which a nodal situation can lead are in themselves most often not ludic, but are merely differing *presentations* of events. This does of course not mean that the node preceding the presentation is in any way less of a node, only that there is very often a clear-cut change from nodal situation to passive presentation. This is the form that is most common to FNs involving choice in other media, such as books or movies (for example the CYOA type). Video games, on the other hand, are in addition able to create something like a continuous flow from nodal situation to nodal situation, as in the case of spatial movement or real-time combat situations. In these cases, the choices (though they might be mere reflex choices or rather inconsequential) follow so close on

each other that the player will experience their sequence as continuous, just like someone who is watching a movie is unable to see the images on the screen as distinct still images.

By contrast, the most clearly recognizable example of the division between node and presentation in video games is their sometime use of passive multiple endings. Multiple endings of this type in video games could be defined as a branching structure that is not followed by any further gameplay, but, depending on earlier gameplay choices, *presents final outcomes* that differ significantly from each other. As the description and the very term suggests, this structure is most often found at the end of the game. Many story-driven video games today employ multiple endings, as they are a relatively easy way to integrate and showcase the actively nodal nature of video games' storytelling. The feature of multiple endings is to be distinguished from other forms of multiple storylines by the fact that there is a marked difference in the final narrative state that a game can reach. Thus, a game might employ branching storylines that, through a point of convergence, all lead to the same final state or ending. Also, multiple endings should be restricted to differences in final states that are narratively relevant. Especially the dynamic nature of the player character's character attributes makes it very likely that different playthroughs of a game will lead to end states with slightly different characters, or rather, character statistics. This should not be considered a multiple ending structure. In addition, the 'game over' outcome is usually not counted as an ending in this context (although 'bad endings' are counted).

One interesting point in the classification and evaluation of multiple endings in video games is the placing of the node at which the storylines branch off. Paradoxically, this need not be the same place at which the presentation of events branches. Instead, one can distinguish between a 'long term consequence' and a 'last minute decision' type. In the first type, decisions throughout the gameplay will (sometimes covertly) influence which of the possible endings the player will reach, while in the second, there is a rather obvious choice situation close to the end of the game. In the first type, though a choice has been made, the change to the gameworld is not reflected in the presentation of the gameworld for an extended amount of time – the player cannot 'see' that she has significantly changed something –, but only at a later stage. In the second type, where the choice and, more importantly, (some of) the consequences are made more obvious to the player, the presentation differs from the moment of the decision.

A point that is connected to this is the question in how far the player is aware that she has made a decision that will eventually lead to one of at least two different endings. *BioShock* would be an example where this is not the case. Though the decision of how to interact with the Little Sisters is one that the player has to make early (with the indication that it will influence the gameplay from this

point on), there is no indication that it will influence the narrative state of the world after the main objective has been fulfilled. The consequence of this decision comes as a surprise to the player, once it is revealed by the narrator in one of the final cut scenes.

Examples of the long-term consequence type besides *BioShock* are *Fallout 3* or *Silent Hill: Shattered Memories*; examples of the last-minute decision type are *Singularity, Fable*, or *InFamous*. The *Fallout* games are especially strong on multiple endings, as most of them feature an epilogue narration that recounts many of the player character's actions. These recountings are not only concerned with the final decision or outcome of the game, but also with many events throughout its course, and since all of these events can play out in different forms depending on the player's choices, the combined final narration can have hundreds of variations.

One of the games that innovated and popularised multiple endings in video games was *Chrono Trigger*. Not all the story-driven genres of video games put the same emphasis on multiple endings, though it is a feature that is becoming more and more standard. Generally speaking, multiple endings are most common in those games that emphasise player choice, especially in terms of character development. Among these are CRPG and some types of survival horror games, like the *Silent Hill* series. But more recently, even relatively straight first-person shooter like *Singularity* have used multiple endings.

In terms of marketing, multiple endings are also a relatively easy way of enhancing a game's replay value, though this is much less effective in the 'last minute decision'-type such as *Singularity*. In this game, the player merely needs to save the game shortly before the final decision and is then able to replay all of the endings in less than half an hour. This is markedly different in a game like *InFamous*, where the two different endings depend on the playing style throughout the whole game, whether the player has predominantly played as a villain or as a hero. In order to experience both endings, the player will have to play the complete game twice.

Before considering the non-unilinearity of gameplay, we have introduced the concept of levels of observation, with the realization that non-unilinearity on one level can be neutralised when only looking at a higher level. There might be different ways to cross one level, which makes the playing of the level non-unilinear, but the progression of levels might be fixed, which makes this aspect uni-linear. Admittedly, these levels are fuzzy: The only clear-cut difference exists between the substructural level that defines all possible options and the microstructural level that defines objectives to which the options can then be related. But, as we have also seen, objectives can be multiple and can be structured and hierarchised in different ways.

The same fuzziness applies when we attempt to define which changes in the game state are to be recognised as narrative changes to the storyworld, and therefore as branching continuations. From a strictly logical point of view, every game state change is also a storyworld change. In this view, different storyworlds are constantly branching off whenever the player makes even the slightest of inputs, such as looking to the left or the right. It is obvious that such a position is unmanageable to say the least, and counterintuitive to the experience of playing such games. It also clashes with the fact that games occasionally establish game states at specific points in the game that are fixed for every run and completely indistinguishable from each other except for the way the player reaches them. The most obvious examples are uniform 'game over' or 'You Win!' screens that appear whenever a certain condition is met. But such states can also occur right in the middle of gameplay, where one could call them points of convergence.

Whereas a node creates bifurcations that bring the different continuations ever further away from each other, at a point of convergence, different player choices lead to an identical game state (for example the player progresses to the next level), and different storylines arrive at the same narrative conclusion. The basic model for this would be a problem that offers more than one way to arrive at the same solution. In terms of gameplay, points of convergence re-enforce the uni-linearity that is demanded by the agonistic nature of so many video games; in terms of narrative, points of convergence provide closure, the need for which is often created through narrative urgency.

The point of convergence can be hidden diegetically. In *Dragon Age*'s "Landsmeet"-quest, the player character has to confront a traitorous friend, trying to convince a political assembly of his treason. Whether he succeeds is dependent on a large number of decisions made earlier in the game. Success or failure are therefore two different courses that the quest can take, but the reactions to both are important here: in the first case, the player will challenge the traitor, deciding between a duel and a full-scale battle. In the second case, the traitor will order the player character's arrest, resulting as well in a duel or a battle. Thus, both variants will result in events that are identical when viewed from the gameplay perspective and when seen as an isolated narrative event ('The traitor fights the player character'), though different when seen as an event in a narrative context ('The traitor challenges the player character and they fight' – 'The player character challenges the traitor and they fight').

A complete point of convergence effectively functions as a negation of multilinearity, since it neutralises the consequence (in the sense of a variation of outcomes) of earlier choices. But not all points of convergence are complete in the sense that they negate all consequences of earlier choices. Some of them function rather like bottlenecks that keep some aspects of the game from branching

exponentially while providing enough space for other aspects to preserve their differences.

This bottleneck function usually works from the complex to the simple, meaning that the more complex aspects of a game – like the development of the main storyline and the main objective(s) of the game – are reduced first by the point of convergence, and the simpler ones – such as the character attributes of the player character, minor changes in the storyworld such as bullet scars on the wall, or changes to the game's stats such as scores or the point in a continuous in-game timeline[74] – are reduced only partially or not at all. CRPG using a continuously growing value of experience points, for example, never have complete points of convergence.

Points of convergence can be used to identify different levels of observation. As has been said, the point of convergence can only be seen as an identical state in two different runs if one does not consider the way by which one arrived at it. Therefore, by identifying this state as a point of convergence ('The same thing happened last time I played, even though I did something else before!') one also recognises that all of the (non-unilinear) variations that have led to it are of no relevance to it. They therefore constitute a lower level of observation. The question whether a situation is nodal (in the sense of allowing for more than one continuation, and the difference being defined by 'having different consequences') is then determined by the level one looks at. Consider chess once more: looking at gameplay within a single game, there is an overwhelming amount of variance, and therefore non-unilinearity. If one considers every move as a narrative event, then there is an almost infinite number of stories to be told by playing again and again. If one considers only the final state of the game (disregarding the individual pieces), the number is greatly reduced, to three. In chess, there is no significant difference in narrative proclivity between any move on the board and the one move that determines the game's outcome, not least because it has only one point of (relative) convergence (win, loose, or tie). But video games often continuously switch between open gameplay that is low in narrative proclivity and narrative presentations that are largely passive. Many first-person shooters can be identified in this way as structurally little more than uni-linear level progressions, where the player needs to arrive (non-unilinearly) at a specific goal (the end of the level) and is then rewarded by an invariable cut scene that leads into the next level. It seems therefore not unreasonable to call such games largely uni-linear in their narratives, because the distinction is so clearly marked. Other games

74 *Skyrim* for example keeps track of the date within the gameworld. Since the beginning of all quests (including the main quest) can be chosen by the player, the quests will happen at different 'historic' times, depending on the player's choices.

rather blur the lines, enriching the gameplay parts with narrative forms (e.g. by having the characters talk in potentially divergent ways, or by using spatial narratives) and thus significantly change the player's knowledge about the game's storyworld depending on her course, even though the storyworld's *state* remains unchanged at the point of convergence.

The narrative that can be experienced by the player while playing (an experience she is partly responsible for herself) and the narrative that is presented by the game while ignoring her agency still often sit uneasily together, with presentation regularly reducing the non-unilinearity of a game's narrative experience. Video games are both procedural and scripted, which is one of the reasons for their great success, but it also means that they constantly have to negotiate between openness and significance. The more interesting cases do this not by distinguishing between procedural gameplay and scripted narrative presentation, but by integrating both structurally.

4.1 Non-Unilinearity in Quest-Based Narrative

The structural element most commonly mentioned when talking about actively nodal narrative in video games is the *quest*. At its core, a quest is an identifiable objective that the player is given, but that is not necessarily identical to the game's overall objective. Therefore, *Pac-Man* or *Space Invaders* are not regarded as using a quest structure. A quest usually consists of a quest-giver (often a non-player character, sometimes the gamemaster), a task that needs to be completed by the player character, the player character's activities to complete this task (including specific efforts, overcoming obstacles, finding out about the right way to complete the task), a notification that the task is completed, and a presentation of the consequences of the completion. Quest structures are most common in CRPGs, but they are also employed in most open-world action adventures.

The term quest relates, on the one hand, to the fact that most games are objective-driven, that is, they set a goal for the player to achieve in order to 'win'. On the other hand, it also suggests that some games contain more than one objective, and that it therefore makes sense to distinguish between different objectives. And finally, the term implies that these multiple objectives are not merely progressive repetitions, but are perceived by the player as individual units. This is the main difference between quests and levels. Progressive levels usually confront the player repeatedly with the same objective that is merely varied in selected aspects. Thus, in *Space Invaders*, the player might meet more or faster enemies in each level, and in *Tetris* the speed of the falling blocks might increase, but her objectives stay the same throughout the game: defeat the enemies, fit the blocks

into the empty spaces. The variations might be considerably broader, as in the different and often highly original spatial layouts of jump'n'run or platforming games, but there is still mainly a feeling of progressive (and progressively more challenging) repetition.

This is not to say that quests cannot be or are not arranged in progressive sequences. Most games confront the player with quests in a clearly pre-structured sequence that is often enough progressive in the sense that one quest needs to be fulfilled before a new one becomes available. But there are important distinctions: there is no necessity to arrange the availability of quests sequentially, and there is no necessary connection between the sequence of quests and their difficulty. In *Tetris*, it makes no sense to reverse the increase in speed from one level to the next, since the repetitive objective will only remain interesting for the player if the skill challenge is increased. By contrast, quests are often chosen for what their objectives *mean*. Their objectives are understood by the player to be primarily motivated by their meaning for the storyworld, and only secondarily by gameplay reasons. In *Tetris*, the player usually does not spend any mental energy on imagining the specific kind of gameworld in which the speed of falling blocks increases. They do become faster because that makes the game more challenging to play. By contrast, the objective of a quest is usually explained semantically, with reference to existents within the game's storyworld. This is why quests are generally considered to have such a high narrative relevance.

In many simpler games, the game objective is often stated before the actual start of gameplay by the gamemaster ('Defeat the alien invaders!'), whereas in quest games, the player theoretically has no idea what tasks will await her, and the information about them is provided completely within the gameworld. Like all semanticizations of game rules, the narrative perception of quests is also an illusion willingly made by the player, and there is great variation in the emphasis that different games put into coaxing their players from a perception of gameplay necessities to one that is more strongly narratively motivated. As Egenfeldt-Nielsen, Smith, and Tosca write: "Ideally, quests are the *glue* where world, rules and themes come together in a meaningful way." (183) In almost all quest-based games, solving a quest, even if it is not sequentially arranged, will also gain the player a gameplay benefit, most commonly by improving some of the character's attributes. Through her actions, the player will automatically gain 'experience points' which will make her character stronger, faster, or more resilient. This means that the narratively perceived reason for undertaking a quest ('I want to kill the monster because the people of the village of x have asked me for it') is competing against a gameplay reason ('If I kill the monster, I will get experience points for it'). When the gameplay reasons become predominant, players will engage in activities like 'grinding', where the same task is done repeatedly not

because it makes sense in the storyworld but merely in order to gain experience points. When this attitude is added to simple or lazy game design (or when it has to work within the confines of a persistent gameworld such as in massive multiplayer online role-playing games [MMORPGs]), the narrative motivation of quests can become a very thin veneer that is all too open to be ignored by players. This is especially true for the repetitive multitude of so-called 'kill' or 'fetch' quests, in which the player is asked by a non-player character to kill a specific amount of enemies or to gather a specific amount of items. After the tenth or fiftieth such quest, the semantic properties of the enemies or items hardly matter to the player anymore. But there are also numerous examples of quests that are just the opposite: quests that are introduced by original characters, whose objectives are not even clear until the player has invested energy to learn their narrative context, and whose solution demands of the player to understand the semantic properties of the storyworld.

In addition, because of their distributions within a game, quests are interesting for the relation between video game narrative and uni-linearity. As has been pointed out, compared to levels, they are much less progressively[75] and therefore uni-linearly structured. Ordering multiple objectives within one game by quests opens diverse possibilities for non-unilinearity. And since one of the main features of quests is that they *must* be narratively perceived by players in order to be playable, this means that quest-based games are highly capable of creating non-unilinear narrative structures. In order to understand the non-unilinear potential of quests, one needs to look at the way that quests are combined within a single playthrough.

As has been pointed out, quests can be combined in a progressive, causal, and uni-linear way. This means that some quests will only become available to the player once she has completed another quest. Such a sequence of progressive quests is called a quest chain. Quest chains are usually tied together by an overarching objective and narrative. Thus, the attempt to find the player character's father can be broken down into a series of individual steps that need to be done one after the other and that all form individual parts of the quest chain. In gameplay terms one can also note that the quests of a chain tend to increase in difficulty. Quest chains are mainly used to provide the player with a central and suitably complex storyline, and to ensure that certain areas of the game are visited by the player in a pre-set order.

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75 Not all level structures are progressive. One might think of a racing game that has different race courses that could be considered as levels, but that makes them all available to the player at once. But then, such games usually also contain tournaments that could in turn be conceptualised as quests.

Generally speaking, only one of the quests in a quest chain can be attempted by the player at the same time. And yet the number of games that enable only one simultaneous quest is rather small. Most quest-based games rather turn players into a modern business manager, balancing the demands of a multitude of tasks at the same time. In these games, there is either more than one quest chain, or there are additional quests that are not part of the chain, and that can be activated at the same time with the chain.

While some quests (mainly those that are part of a chain) are activated automatically through specific events in the game, most of them need to be started actively by the player. Since these quests are almost always provided by an intradiegetic agent (a non-player character, an audio message calling for help etc.) they can be said to be distributed spatially, according to the position of the quest giver in the gameworld. In order to start a quest, the player needs to find a quest giver and interact with it.[76] Depending on the player's freedom of movement, this means that the order of quests is not or not completely pre-structured, but open to the player's (spatial) choices.

Almost all recent quest-based games distinguish between two types of quests: the main quest that in its entirety constitutes the main storyline and the side quest, consisting of more or less independent narratives that are not causally connected to the main storyline. While the main quest is usually organised as a sequential quest chain, side quests are more open. Therefore, main quests mostly form a uni-linear storyline with the individual quests arranged progressively and in a fixed order. The main quest also introduces the most momentous narrative changes into the gameworld, such as the death or emergence of major characters or the destruction or saving of a city. Main quests have an overarching objective that is defined at the outset of the game ('Defeat the evil tyrant!') and that is often of major consequence to the player character ('Avenge your father's death!'). After the completion of the main quest, a game is usually considered 'completed'. Many games nevertheless enable the player to continue playing after the completion of the main quest, creating an open-ended gameplay.

A side quest on the other hand is not part of the main storyline or quest chain. Side quests are always optional, the player can choose to play them or not, with no or only limited consequences within the game. In most cases, the function of side quests is to provide additional gameplay challenges. Their focus is often on the skill required to complete them rather than on their place in the gameworld's narrative, even if the game has a strongly emphasised storyline. This is often the case in sandbox games like *InFamous* or *Prototype*. Here, many side quest mis-

76 The neutral form is used here because a quest giver does not need to be a person, it can be an object that the player character finds, or an event that he perceives.

sions are merely tests of skill, such as parcour racing. They are not legitimised or even explained diegetically (it makes no sense that the protagonist, faced with a deadly viral epidemic, would engage in parkour racing at this moment) and can be repeated infinite times. On the other hand, games like most CRPGs that stress the non-unilinearity and richness of their storyworld might make side quests high in narrative proclivity and integrate them closer into the storyworld. This can range from the blatantly stereotypical ('Kill 10 wolves. Now kill 10 more wolves.') to fully-fledged mini-narratives, as in *Fallout 3*.[77]

Generally speaking, the main quest is obligatory and the side quests are optional, though different games handle this differently. The more a game's design tends towards a sandbox style, the less a player will feel obliged to follow the main quest in order to be able to appreciate the game's values. On the other hand, side quests are rewarded by the game, mainly through character development and in-game currencies. It is mainly the inclusion (and rising appreciation within game design) of side quests that make CRPGs the genre within video games that most successfully transcends uni-linear storytelling. Concerning the uni-linearity of game-storytelling, the focus must be on the interaction between main and side quests, since the more the difference between an obligatory master-plotline and optional sidelines is abolished, the less uni-linear a game's storytelling becomes.

The most restricted form makes all progress of the player within a game dependent on his fulfilment of the main quests. Thus, doors might not open before a certain task is accomplished, some items or non-player characters might not be available, etc. Side quests for this type tend to be of the 'fetch and carry' kind with little or no narrative content or significance. Frequently, their availability is tied to the progression of the main chain: they only become available when the player is in a certain area or after certain events have happened.

Most CRPGs use this form at least for an initial stage that often serves to establish the character (and its attributes) as well as being a tutorial for the player. Thus, in *Fallout 3*, the player character starts as a toddler in the secluded (and hermetically sealed) world of a fallout shelter, growing in three episodes to a young man/woman before he can exit this place and enter the open world that is the game's main setting. From then on, the player still has a main plotline, but she can potentially go wherever she wants to. Similarly, the game *Fable* starts with the character as a small boy who has to perform one pre-scripted task before he is taken to a place of training (thus giving rise to small tutorial tasks for the player). After that training, the character can freely enter the world of Albion.

77 The lack of diegetic legitimization of side quests has already led to parodist satirizing, for example in the game *DeathSpank*.

Thus, the main gameplay of these games constitutes a different form of relation: the (relative) independence of side and main quest.

Many recent CRPGs follow this structure that combines a main quest (usually identified in the quest log as a different or special type of quest, but also recognizable by the higher significance of its outcome) with numerous and narratively interesting side quests. Often, there are no gameplay punishments for not completing the main quest (though there might also be gameplay rewards, such as a higher number of experience points for the completion of a main quest by comparison to a side quest). The main factor here is the lack of time-restrictions for the completion of the main task. If the player had only a limited amount of time to complete the game's main objective, she would be strongly discouraged from spending any of that time on an unrelated task. Games with side quests therefore do not have a general countdown, the player has an unlimited amount of time. This can create the problem for game designers how to keep the player interested in the main quest chain and how to maintain a suspenseful sense of urgency when there really is none. The solution to this is narrative immersion: it is only through narrative strategies that a sense of urgency can be created, even if this urgency is not really justified by the game system and its rules.

Narrative encouragements can come from the commentaries of non-player characters ('I think you should go and talk to the Guildmaster, he seemed to be desperate…'), the higher emotional involvement of the character ('Find your missing father!' as opposed to 'Go to the forest and kill x werewolves!'), or the greater significance for the storyworld ('save the world!'). Narrative encouragement for the main quest can also be evoked through the exposition that leads into the game. *Dragon Age* starts with a long cut-scene that not only tells of a first invasion of dangerous forces 400 years ago, but also of the imminent danger of a new one in the game's present. In fact, the narrator muses that it "might even be too late" to repel this danger, providing an overall atmosphere of insistence and urgency. Though the player knows that there is no countdown towards doom, for the player character there is indeed. Throughout the game, non-player characters might remind the player character of his obligations, sometimes constantly, and sometimes right after a task has been accepted by the player, as in *Red Dead Redemption*.

In *Morrowind*, already the opening cut scene as well as the beginning of the gameplay stress the game's open-ended structure as well as the relative importance put on character. The first motto states that "without the Hero, there is no Event". The next text makes clear that no disclosure is to be expected from the exposition, and therefore (not yet) any emotional involvement of the player/character in any specific storyline, except for a very vague promise of significance ('You were chosen'). In the intro to *Fallout 3*, a similar emphasis is implicitly put

on openness. The very first sequence is first of all a world-establishing shot, and the later voice-over narrative stresses both the repetitiveness of human violence (taking away urgency) and the ultimate stasis of the character's starting situation in the hermetically sealed "Vault 101".

Many recent games can be taken as examples of a relative independence and importance of the side quests, to the point that players for a while might even lose sight of the game's main objective. Most of the games that focus on spatial exploration fall into this category. In *Assassin's Creed II*, of the 200 missions, about half are side quests. Just as in *InFamous*, or *Just Cause 2*, navigation is as much vertical as it is horizontal, since the player can attempt to climb any building encountered in the game. In both games, numerous collectibles are scattered throughout the gameworld and are often found in hard to reach places. As there are rewards for collecting, the navigation turns into an end in itself. In *Red Dead Redemption*, though basically all the normal quests are part of the main quest chain, the game puts a lot of effort into 'distracting' the player from these quests. These distractions are enabled through the (visually appealing) open-world structure of the game and the numerous random encounters while navigating the gameworld. Such encounters can range from various animals that are able to attack the player character or can be hunted by him (for which he will earn special achievements), to damsels in distress, gunfights and robberies as well as several mini-games that the protagonist is being invited to. As one encounter can lead more or less seamlessly into the next, the effect is that the player might forget for quite a while what she is supposed to do according to the main quest. The *Fallout* games also range heavily in this category. Besides the many (fully scripted) side missions that can be encountered in the gameworld (and for which it is often necessary to go where the main quest chain would never lead the player), there are even more places that provide gameplay challenges (enemies), rewards, and narrative proclivity (through intensive use of spatial narrative, see 4.2.2). It is easy to lose track of even a side mission through the pure joy of discovering. The *Fallout* games also fall into the somewhat smaller category of games that invest their side missions with an unusual degree of narrative proclivity, so that they become full-fledged stories in themselves that are richer and deeper than many main story lines of other games. All games of this type are from the CRPG genre. Besides the *Fallout* games (probably the best examples existent) one could name such games as the *Elder Scrolls* series, or *Deus Ex: Human Revolution*.

Finally, there are quest structures where main and side quests actually influence each other, further diminishing the distinction between them. In this type, not only are the side quests independent of the main quest, but their completion actually has an effect on the events of the main quest. In the most extreme case, this means that the difference is abolished and instead there is more than one

way of arriving at a certain narrative goal (that serves as a point of convergence). A rudimentary form of this type is regularly achieved by the fact that side quests contribute to the character's development, though most often only in the form of his attributes. Thus, the completion of a side quest will gain the character different sorts of in-game currency that can be used to improve his capabilities (strength, armour, weapons etc.). Depending on whether she chose to complete the side quest or not, she will approach the next main quest with different capabilities, making it easier or harder (as she also might have lost health or ammunition during the side quest, e.g. forcing her to use stealth instead of force) to complete.

But especially in games that put a strong emphasis on non-player character factions (like *Fallout: New Vegas* or *Skyrim*), quests that are optional for the completion of the main quest chain can nevertheless influence the way that the latter plays out. In *Skyrim*, for example, the main quest chain is concerned (as is common for the genre) with a world-threatening enemy that must eventually be defeated. But at the same time, the land is also divided in a civil war. The player character is repeatedly asked to take sides in this war, though this is not necessary for the completion of the main quest. And yet, if the player character does participate in the war, the side he chooses and events within it will strongly influence aspects of the main quest. This complicated structure of interrelated but optional quests makes games like *Skyrim* and *Fallout: New Vegas* some of the most advanced examples of a deep and yet non-unilinear narrative in video games to date.

Besides asking how the total number of different quests is distributed and connected in a single video game, one can also look at the way that individual quests are structured. This mainly concerns the options that players get for completing the task set by the quest. These structures are related both to gameplay and narrative, as different ways of achieving a goal will lead to the experiencing of different narrative events by the player.

Most quests in video games use a uni-linear structure, which means they define a goal that will only be reached by successfully choosing and mastering a number of intermediate steps organised in a fixed and progressive sequence. This structure is reflected in the imperative mode in which walkthroughs instruct potential players how to successfully complete a quest. This is an excerpt from a walkthrough to the early adventure game *Police Quest*:

> The dressing room. Walk to your locker and open it. Type 'CHANGE CLOTHES' Now you will get information saying that a shower would do just good, but we haven't got time for that yet. Type 'CHANGE CLOTHES' again. You're not going to shower until it is said so. Type 'TAKE THE KEYS TO THE CORVETTE' Close the locker and leave the dressing room. (Giovetti)

Many if not most quests in video games take on a similar form, with a clearly prescribed set of actions that need to be performed in the right sequence for success. The player character might for example come to a village. On the way to the village, he has passed through a wolf-infested forest. Several wolves had attacked him and he had to kill them in self-defence. In the village he meets the mayor, who tells him about the problem they have with wolves in the forest, asking him to kill at least ten of them, thereby giving him a quest. The fact that he has already killed more than the required ten wolves does not lead to the instantaneous completion of the quest, though, because they had been killed out of sequence and 'do not count'. The player character has to go back to the forest and kill 10 more. One might call this bad game design, if narrative immersion is a desired goal; in any case it is excessively uni-linear, as the structure of the quest cannot be influenced by events outside of it. There is still non-unilinearity, simply because players have the option to do things that will *not* lead to success, but the focus is clearly on the uni-linear correct sequence.

Besides these cases, quest structures can also be non-unilinear in their way to success, which means that there is, at least at one point, more than one option for the player how to proceed in the solving of a task. Again, this classification is only meaningful when related not to the substructure of the minutest actions, but to the microstructure of meaningful actions. The simplest non-unilinear structure gives the player a number of sub-tasks, all of which will lead to the main task's completion, but which can be approached in any order the player might choose. In a typical example, the player will be asked to gather different items that – when combined – fulfill a function such as the parts of a bomb or of a bomb disarmament device. Also the 'Kill ten wolves'-quest described just now is non-unilinear in this respect, since there is most likely no order in which the individual wolves are to be killed.

Quests that allow for multiple ways to fulfill their objective, but only have one state of successful completion are sometimes said to have a 'python' structure (resembling not so much a python as one that has swallowed a large animal). The completion of the quest acts here as a point of convergence, so that non-unilinearity can only be claimed for within the quest. Of course, with the widespread inclusion of experience points of some kind, even python structures will lead to slightly different end states, as the way or strategy taken has influence on the accumulation of experience points (or any other value that is dependent on player actions). Thus, taking a longer and more difficult way towards a goal with more obstacles might leave the player at the end of the mission with comparably higher stats, which in turn will influence the gameplay from that point on.

Strictly speaking, almost every quest has this structure, as the complexity of games and player input make it virtually impossible to fix only one possible

solution to a goal. This would only be possible in extremely abstract games and fully impossible in simulative games containing navigable space. But there are huge differences in the significance of these variations, from crossing the room in a slightly different way to using a completely different strategy. This latter end of the spectrum has by now become almost a marketing necessity for advanced and complex CRPGs. The recent game *The Witcher 2*, for example, was advertised by a commercial that specifically addressed the 'python' structure of a quest where the protagonist needs to break out of a prison, interestingly presenting it as conflicting accounts of this prison break through different non-player characters.[78] Another game that has put a lot of emphasis on leaving it up to the player how objectives are being completed is *Deus Ex: Human Revolution* (2011), following the groundbreaking structure of the original *Deus Ex* from 2000. Major tasks like getting information from a police station can be attempted in at least three very different ways (using social skills with non-player characters, sneaking in or starting a violent attack), and non-player characters and even newspapers found in the gameworld will start to comment on the way that the player has chosen.

This structure can even be found in first-person shooters. In *Crysis 2*, when approaching a hostile situation, the game will notify the player that "Tactical Assessment [is] Available". The player character can then put on a special visor that will tag different objects in the immediate vicinity together with their use for different tactical strategies, such as 'Flank', 'Resupply', or 'Infiltrate'. It is left up to the player to follow any of these tactical suggestions, but the choice will strongly influence the way that an encounter is engaged, employing different routes, weapons, abilities and strategies.

The advantage of this form for game designers is that it provides some non-unilinear experience while not excessively proliferating the potential game structure and therefore content that needs to be produced but will not be experienced by the player. Still, python structures are ambivalent in their relation to the game's non-unilinearity. Depending on whether one looks at individual situations or general structures, they can be regarded to either emphasise openness and non-unilinearity, or to enforce closure and uni-linearity. It is important to note that the different evaluations are all based on the narrative packaging of the structure, not on the structure itself, which remains unchanged. The difference lies in the way that game design puts this structure in relation to its mode of storytelling.

The python structure is least aesthetically satisfactory when its function is merely to create the illusion of agency without any willingness on the part of the

78 "The Witcher Assassin's of Kings Escape the Prison Story Trailer".

game design to actually grant any. This is experienced as a disruption of narrative consistence with the result that the (narrative) consequence of decisions becomes de-emphasised. *Deus Ex: Human Revolution* exemplifies this problem. As has been said, this game strongly emphasises the player's agency in how she wants to play different quests (making it for example possible to consistently choose between violent and non-violent solutions) and even further strengthens player agency through actually branching options. But for all this, the game will, at specific points, force events containing player character decisions on the player through passive cut-scenes or through certain enemy encounters that can be solved only in one way, something that is experienced as highly jarring with the freedom that the rest of the game allows and that has been a constant focus of criticism in the initial reviews.[79]

A truly non-unilinear quest structure is one in which the player can make different choices that will lead to different results, all of whom are equally validated by the game. Every quest has theoretically a branching structure with the two options 'Mission complete' and 'Mission failed', but the second one is usually not acceptable to players, as it will either end the game or automatically force the player to repeat the quest. Thus, in effect, such quests only have one validated resolution.

Again, one needs to distinguish between main and side quests. Since side quests are by definition not necessary for the completion of the game's main objective, the player can indeed accept failing one of them (unless this failure means the death of the player character) and continue playing. This makes branching structures much easier to implement in side quests, though, depending on the level of observation, one can also regard them as 'python' structures, if their potentiality is of no consequence to the main quest line that will then act as a point of convergence.

In *InFamous*, the player encounters a number of side and main quests that enable her to act in a 'good' or in an 'evil' way, mostly by deciding whether to help other non-player characters or to merely work for the player character's own gain. Thus, these quests have a branching structure with two different options. The respective decisions will gain the player character 'karma points' that influence his position on a scale between good and evil. The 'karma' value can have slight effects on the gameplay, but the decision will in no way alter the narrative content of the next main quest that the player starts with regard to the cut scenes that are part of the quest. It also has very little influence on the narrative experience of playing the quest (in that non-player characters uninvolved in the quest might be

79 E.g.: "Poor boss fights remove the element of choice" (VanOrd). Cf. also Hussain and Reiner.

more (good karma) or less (bad karma) supportive of the player character, commenting, applauding, or throwing stones at him or his enemies).

Of more narrative consequence are the branching quest structures in storyworld-centred CRPGs like the *Dragon Age* or *Fallout* games. In *Dragon Age*, the player has to decide during some quests which of two or more opposing non-player character factions to support. The following quests are not influenced by this decision, but at the very end of the game, the factions that the player character has supported will come to his aid against the final enemy, while the other factions will remain absent. At a different point in the game before the main battle, one main quest takes the shape of a political gathering (called 'Landsmeet') in which the royal succession of the storyworld's kingdom is to be determined. This highly complex quest can take a number of different courses depending on decisions made earlier in branching side or main quests as well as on decisions made during the quest itself. Decisions in the earlier quests will have influenced the loyalty of non-player characters that will in turn speak in favour of or against the player character at the gathering, and they will have influenced the behaviour and attitude of central non-player characters, such as the willingness of two characters to join their hands in marriage to rule together. Other aspects that will influence the quest are the 'race' and gender of the player character (the latter will have had an influence on the player character's interactions with some non-player characters). There are ten major variations to the outcome of the Landsmeet,[80] though they all have one thing in common: they are all followed by the same next main quest. Thus, judging whether this quest and the narrative that it conveys has a branching structure is again a matter of perspective or of the level of observation. Games like *Dragon Age* provide instances of widely branching plotlines even though they do not strictly adhere to an arborescent structure for the game's narrative as a whole.

But it is even more complicated than that: all of the various courses that the Landsmeet quest can take are eventually[81] followed by the quest involving the 'final battle' against the game's main enemy. As has been shown, this battle will play out slightly differently according to decisions made earlier in the game, as different non-player characters will come to help. Yet some elements of the quest will invariably remain the same, such as most of the cut-scene dialogues and the enemies that are encountered. Again, how is one to determine whether – and in how far – versions of this quest differ from run to run?[82]

80 Cf. "Possible Landsmeet Outcomes".

81 Eventually, because even after completing the Landsmeet quest, the player can still choose to visit most places in the gameworld and complete some of the remaining side quests.

82 For a reference to the multiple endings of DA:O cf. "Epilogue (Origins)".

Finally, and in strong contrast to the earlier example with the forest wolves, it is possible that the structure of a quest *is* fundamentally influenced by events outside of that quest, usually prior to the beginning of a quest. This leads to a much more dynamic and narratively immersive experience by the player, since it both strengthens the impression of narrative coherence of the gameworld (as events that *should* make a difference actually *do* make a difference) and of the openness of the narrative, as the range of options is increased. Logically speaking, this means that there are two or more quests that are similar to each other, only one of which will become available to the player, depending on certain preconditions at the time of the quest's activation. But the player's experience will more likely be that there is one quest that changes according to decisions made earlier.

The *Fallout* games use this structure repeatedly in their attempt to create non-unilinear narrative experiences. This is at its most intricate in *Fallout: New Vegas* with its complex system of non-player character factions. Helping or fighting different factions (mainly through side quests) will lead to differing relations and will shape the availability or structure of many other side quests. If the player character is a mortal enemy to one faction, a quest with one of the faction members asking for help will simply not be available, or the solution to a quest will differ because the player character cannot rely on the help of that faction in solving the task.

Truly branching and dynamically adapting quests with strong and complex fictional semanticization are clearly a minority among the many quests offered to players of video games, and they are mainly restricted to a specific genre, but their existence shows the capabilities of video games as non-unilinear storytelling devices. And, depending on whether one looks at the structuring of all the quests in a game or at the structure of an individual quest, the actively nodal nature of video games makes all quests (and also individual levels) develop in a non-unilinear way.

4.2 Non-Unilinear Narrative Outside of Quests

Not all of the narrative content of a video game is directly related to the quests that structure most narrative games, though they might be most easily recognizable as narrative forms. The most important elements of video games that players encounter independently of the objectives of quests and the events that unfold through them and that can increase narrative proclivity are navigable space and the construction and perception of the player character. Both of these areas can not only heighten the player's perception of a gameworld as narrative, the narra-

tives that are provided through them can also be highly non-unilinear, in the case of spatial narratives almost necessarily so. This is because these areas often are much more reliant on a larger variety of player choices than the development of a quest, or the ordering of different quests in one game.

4.2.1 Character

Of course, the openness that is potentially possible is still largely dependent on the options that games allow. This is especially true for character construction and perception, since that can range from very limited to very open forms. 'Character' mainly refers to the construction and perception of the player's character (often called an 'avatar'). This character is most commonly referred to as the protagonist of the game or as the player character and it is distinguished from the non-player characters. Character conception can be differentiated on the one hand between characters that are stable and those that are dynamic, and on the other hand between those that are presented with preconceived narrative attributes and those that are a blank slate, to be filled by the player with narrative meaning.

Video game characters can be completely static, that is, no aspect of them is changed throughout the playing of a game, no matter what choices the player makes or what actions she performs. However, since video games are usually objective-driven, setting a task that the player needs to complete by using the player character, even the generally stable ones are dynamic insofar as they are thinkable in a state of 'attempt', 'success' or 'failure'. Since in most of these cases, the latter two states exist only outside of the gameplay proper (as a general 'game over' state either indicating success or failure), one can claim that these characters are static to the player's experience. Examples of this are characters from jump'n'run games that have only one 'life', as in *I Wanna Be the Guy*.

A first differentiation can be introduced with characters that have more than one 'life', since their state changes during gameplay as soon as they lose one of these lives. Examples of this would be early jump'n'run games like *Super Mario Brothers* or *Donkey Kong*. This mutability can affect different aspects of a character, such as the character's appearance or his attributes with many games allowing for very complex visual character creation (though the results are hardly as varied as one might expect). Although some single-player role-playing games give the player an avatar that is largely predefined for the sake of telling a specific story, many role-playing games make use of a character creation screen. This allows players to choose their character's sex, their race or species, and their character class. Although many of these traits are cosmetic, there are functional

aspects as well. Character classes will have different abilities and strengths. Common classes include fighters, spell casters, thieves with stealth abilities, and wizards with healing abilities. Characters will also have a range of physical attributes such as dexterity and strength, which affect a player's performance in combat. Mental attributes such as intelligence may affect a player's ability to perform and learn spells, while social attributes such as charisma may limit the player's choices while conversing with non-player characters.

In most cases, such 'branching' (deciding whether the character should have long or short hair, etc.) happens even before the actual gameplay starts, and the result remains fixed throughout the rest of the game. Some few games continue to change the player character's appearance during the game in reaction to the player's decisions, most notably the games on the *Fable* series, but also some *Grand Theft Auto* titles. In addition to that, most CRPGs let the player choose different pieces of equipment for the player character to wear and will reflect these choices in the visual presentation. This is even more important in multiplayer games, where players often feel the need to distinguish themselves from the many other players online through a distinctive look.

By far the most common type of character dynamic, and one that has a wide range of applications, is that relating to the player character's attributes. Characters in video games are strongly defined by the things they can do. Some games feature characters that can climb vertical surfaces (*InFamous, Assassin's Creed*) or even run up them (*Prototype*), others have characters that, though obviously physically highly capable, cannot (*Fallout 3*). Many characters are able to do things that real humans cannot do, such as firing lightning bolts from their hands (*InFamous*). These abilities are usually referred to as 'powers', and they are only gradually acquired during the game. Thus, a character starts a game with a relatively limited range of options that constantly increases. This increase can be unilinear, when a character acquires powers as a necessary consequence of progressing uni-linearly through a game. Or it can be non-unilinear, when the player can choose between the acquisitions of different powers that are purchased through an in-game currency, like experience points. The acquirable skills are usually arranged on a 'skill-tree', branching into different areas – there might be skills for fighting, for crafting items, or even for social interaction. As the ability to acquire such skills has to be earned through performing specific gameplay actions, they are a limited resource, and the games are balanced in a way that it is almost impossible to choose all of the skills. Thus, decisions are necessary and of a high degree of irreversibility. Since it takes a lot of gameplay time to acquire several consecutive skills that form one branch of the tree (becoming an expert magician or blacksmith, for example), going back on these decisions through older savegames would mean the loss of this time and the 'work' invested in the character's

development. CRPGs often justify the 'role-playing' in their genre description through the range of options that they give players to choose different skills for their characters, which are organised in ever more complex skill trees.[83]

Character attributes can be seen to have relevance both for gameplay and the narrative perception of a game. While they often enough have influence only on the playability of a player character and his performance within situations with low narrative proclivity, they can also influence the narrative content of a game. For example, some narratives/quests can only be accessed when a character has reached a certain amount of experience points, or some dialogue options will only be available when a character's social attributes have reached a certain level (e.g. in *Fallout 3*). The relationship to different non-player character factions will often define the character, who might be asked to join a guild of thieves, or, as in the case of *Fallout: New Vegas*, choose between helping or opposing a ruthless, slave-owning tribe of aggressive warriors and a more restrained but rather oppressive military organization.

An interesting case is the use of drugs in *Fallout 3*. There are numerous substances that can be found or bought by the character throughout the game that, when taken, enhance certain of his attributes. Using one of these substances too often, though, will lead to an addiction that results in a decrease of certain attributes, when the substance is not taken any more. The gameplay advantage that the substances represent is thus not as straightforward as it usually is with attribute-enhancing in-game items. Rather than just using such items whenever available, the player has to decide on a play-style that can be experienced as part of the fictional character's conception: is the character a person who risks the negative effects of addiction to benefit from the drugs' effect, or does he constantly use the drugs anyway, resulting in the permanent need to find or buy new ones, or would he rather not use them at all, selling them instead for a profit?

Some games further emphasise the narrative grounding of character attributes by the way they are selected in-game. Instead of the player simply choosing a certain character class with the associated attributes, she is being given a number of questions, most often asking for actions in situations of moral dilemma. Her answers then influence the class that the computer chooses for the player. All of the questions describe mini-narratives that enrich the player's understanding of her own player-character. This form is used for example in *Ultima IV, Morrowind* and *Fallout 3*.

The most common, though not always the deepest, narrative potential for character attributes lies in their enabling the role-playing element of games with

83 For information about the skill trees of *Skyrim*, cf. Cheong.

non-unilinear character development. This is most pervasive in games that follow the classic RPG model. It is somewhat less so in the newer genre of open-world games that merely allow the player to choose between a number of 'powers'[84] (such as *Prototype*), even if the powers are divided into moral opposites, as in the *InFamous* games. In these games, some powers can only be acquired by characters who have made enough morally good (or bad) decisions, but their use in gameplay does not differ in a narratively relevant way. This is different for complex CRPGs with their wealth of character options to choose from, options that go beyond exchangeable fighting styles like wielding a one-handed or a two-handed weapon. The game *Skyrim*, for example, offers the player 18 different skills to develop, many of which have the potential to influence the way that the player interacts with the world. Equally, they influence her narrative conception of the character and even her narrative experience of the gameworld. The game allows the player to create many items that are useful for gameplay through crafting, for which certain skills are necessary. A player who is interested in becoming an excellent blacksmith, for example, will most likely seek out forges for practicing her craft and mines for getting the raw materials. As with the also available enchantment or alchemy skills, smithing has no direct relation to the game's storyline, but is an optional way to both flesh out the character and help the gameplay (as the character can then create powerful weapons or earn gold to buy important items).

Such games give the player the option to choose between different ways of how they want their player character to interact with the world. These options combine gameplay with the narrative conception of the character. To choose between a character who is vulnerable to attacks but highly skilled in sneaking into a building and another one who can force entry by superior force leads to a vastly different gameplay experience *and* to the creation of a different idea about the player character in the player's mind. The character then 'is' someone who would use force, or on the contrary 'is' someone who would rather use stealth. How markedly the gameworld reacts to such character choices in different ways is of course dependent on game design. An endless stream of near-identical fantasy-themed and shallowly designed CRPGs has rendered such choices more often than not pointless and devoid of any real consequence, but others like *Deus Ex: Human Revolution* put a lot of emphasis on acknowledging the player's character-based decisions within the gameworld.

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84 'Powers' are often combat-centred, but more generally they refer to any capability that the character can have and that will in at least one situation expand (or even limit) his range of options. A notable example of non-combat oriented capabilities are rhetorical and crafting skills in CRPGs.

One further distinction in character conception for video games is whether the game ascribes narratively relevant information to them or not, independent of player choices. Among such information can be a name, the back-story up to the point that the gameplay begins, or any further information on their personal character. The existence or absence of such information will strongly determine the type of role-playing that the game allows. The more information is given, the more the player understands her task as 'fulfilling' the requirements of the role that the information indicates. If, on the other hand, the character is a 'blank slate', that is, nothing or little is known about him, it is the player's task to invent a role and to act accordingly. The role becomes scriptable.

The difference between pre-scripted and scriptable character conception is to an extent mirrored by the difference between Western and Eastern (mainly Japanese) CRPGs. Two clear examples from opposing sides are *Final Fantasy XIII* and *Fallout 3*. Consequently, *Final Fantasy XIII* starts its narrative 'medias in res', much to the confusion of the player, who for a long time is unable to make sense of what is happening and how the characters react, until the back-story is gradually cleared by flashbacks and verbal revelations. The characters are not presented as open to interpretation by the player, much less to have gaps which can be filled by the player. Instead, it is part of the reward structure of the game that the gaps in knowledge are gradually filled by the game through passive cut-scenes whenever the player has accomplished a specified gameplay task. *Fallout 3*, on the other hand, literally starts 'ab ovo', with the birth of the player character, who turns out to be whatever the player wants her (or him) to be. There is of course some pre-scripted information, but much is left vague with the express offer to the player to fill in the gaps. Another common and quite overused plot device to enable such an open character conception is to have an amnesiac character that does not know his or her own back story at the beginning of the game. Thus, everything the player can know about the character will be determined by what the character does throughout the game, and this, in turn, is dependent on the player.

4.2.2 Spatial Narrative

We have already looked at the range of openness that a game's design of navigable space can enable and the degree of non-unilinearity that this allows for gameplay. Such non-unilinearity obviously also has a large influence on the narrative perception of a walkthrough by the player, since multiple paths will also lead to the experience of different narrative events. But apart from this connection of gameplay and narrative paths, the experience of space itself can heighten a game's narrative proclivity. Game spaces have a very high narrative potential,

as they have "the ability [...] to evoke the mental representation that we call story" (Ryan, *Theorizing Narrativity* 412). And they do that as an integral part of the gaming experience, rather than an external element like a cut scene. This is maybe the most important reminder or qualifier when talking about narrative and games: *narrative is what happens in the minds of those who experience*. As humans, we experience life – our presence and agency within it –, and we make sense of it by casting it in the form of narratives. Now, it is the magic of fiction to make us experience something that is *not* us, an experience that is again cast as narrative. While classic narrative media like prose or cinema tend to de-emphasise our presence and to substitute it with the presence of the other, actively nodal media like computer games stress our presence, but they still retain the element of (fictional) otherness: the player experiences her presence within the navigable space of a computer game, but it is not identical to her own space, as her avatar is not identical to her. The difference between the two is narratively relevant fiction. Game spaces are spaces that we can experience through our presence within them as *other* spaces. And this otherness is conveyed by giving this space a story of its own, a story that the player will come to understand through experience and influence through agency. In video games, spaces tell their own stories, that is, they provoke the player to construct these stories within her mind. This provocation is achieved by different methods, which will be sketched in the following, under the general term spatial narrative.

Spatial narrative as a term is suggested as the opposite of *sequence narrative*, i.e. narrative that happens primarily as a sequence of events in time, and that is presented as a recounting of these events through sequentially arranged signs, such as words on a page. Sequence narratives are conveyed through concrete narrative artefacts that usually name states and chronicle state changes. Spatial narratives do not necessarily do so, this is why they do not look the same, though their effect within the perceiver is similar. Obviously, spatial narratives are especially dominant in computer games that use navigable space. Henry Jenkins has argued for the fundamental difference between sequence and spatial narratives:

> Spatial stories are not badly constructed stories; rather, they are stories which respond to alternative aesthetic principles, privileging spatial exploration over plot development. Spatial stories are held together by broadly defined goals and conflicts and pushed forward by the character's movement across the map. (Jenkins)

Another currently used term for spatial narrative is environmental storytelling, a term suggested by Don Carson and further theorised by Jenkins. Carson started out from his experiences as a designer of amusement park rides, stating that "it is my objective to tell a story through the experience of travelling through a real, or

imagined physical space. Unlike a uni-linear movie, my audience will have choices along their journey. They will have to make decisions based on their relationship to the virtual world I have created, as well as their everyday knowledge of the physical world. Most important of all, their experience is going to be a 'spatial' one." (Carson) In a very similar sense, Jenkins talks about "games less as stories than as spaces ripe with narrative possibility" and sees "game designers less as storytellers and more as narrative architects". He then enumerates four ways in which "[e]nvironmental storytelling creates the preconditions for an immersive narrative experience: spatial stories can evoke pre-existing narrative associations; they can provide a staging ground where narrative events are enacted; they may embed narrative information within their mise-en-scene; or they provide resources for emergent narratives." Two of Jenkins' ways are of direct relevance to this analysis of spatial narrative and will therefore be discussed here; the fourth (emergent narratives) seems to rather lead away from the purely spatial focus, and the third, Jenkins' concept of 'enacting stories' and micronarratives[85] is somewhat fuzzy. A possibly better way to deal with these phenomena is by using the concept of the event trigger. As has already been shown, an event trigger is an action performed by a player that triggers a narratively relevant event that would not have occurred or started without this action. In most cases, event triggers are spatial choices, that is, the event is triggered by the player moving to a certain point in space.

Evocative spaces, according to Jenkins, are spaces that refer to or evoke previously existing conceptions of spaces, for example by relating to certain genres like the haunted house stories, or to fictional franchises like *Star Wars*. These spaces heighten narrative proclivity because they remind the player of narratives she has already encountered. "In such a system, what games do best will almost certainly centre around their ability to give concrete shape to our memories and imaginings of the storyworld, creating an immersive environment we can wander through and interact with." (Jenkins) While spaces, or rather: the specific look and design of spaces, trigger narrative content, this content is all derived from memory, consisting of pre-existent scripts that the player recalls and incorporates into her experience of space.

One example might be the genre of the 'foot soldier re-enactment' computer game, where well-known large-scale fictional combats can be re-experienced by the player not through the character of one of the protagonists, but through that of a common soldier, like the *Star Wars Battlefront* series or *Lord of the Rings: Conquest*. While not experiencing the original story events, and possibly never

85 "Micronarratives may be cut scenes, but they don't have to be. One can imagine a simple sequence of preprogrammed actions through which an opposing player responds to your successful touchdown in a football game as a micronarrative." (Jenkins)

meeting any of the well-known characters, the players nevertheless immediately recognise the spaces they are navigating/conquering/defending as part of the larger narrative of the fictional franchise. When looking at *Lord of the Rings: Conquest*, it is obvious that the main evocative element is visual, as the spaces are carefully constructed to resemble those of the movie version rather than being faithful to the book descriptions.

Another very intriguing example is the level design of *Brütal Legend* that is heavily inspired by the artwork of heavy metal covers.[86] Thus, even though the settings are not directly recognizable references to narrative franchises as in the *Lord of the Rings* game, they are still highly allusive and rich in evoking narrative potential. In this case, it is exactly their lack of a concrete and unambiguously recognizable reference that makes them so successful in evoking narrative. The setting called *Screaming Wall*, for example, a wall consisting purely of loudspeakers, and reminiscent of heavy metal stage design, has won the *Escapist's* award for "Most Ingenious Location". The task of the player is to go to this wall and retrieve a number of speakers as 'acoustic weapons' in the ensuing fights. It is an interesting example of how a visual scenery that is familiar to fans of heavy metal concerts (and that has always been a merely visual symbol of acoustic power, since the actual speakers on the stage never were functional/plugged in) and therefore part of the myth of this type of music and the stories it tells (e.g. of sound as aggression and power) is being further enhanced and mythologised through integration into the narrative structure of the game's storyworld. This admittedly demands a high level of reflexive thinking from the recipient, but then 'getting' this meaning can be said to be one of the game's semantic challenges.

Furthermore, spaces can be made narratively evocative by placing visual clues that point to narratives. In order to understand the visual clues left in game spaces, players often need to 'read the space', that is, put elements or signs in a spatial relationship that then reveals a temporal and causal relationship, and therefore a *sequence* narrative. Visual clues are here defined as any kind of visually detectable signs within a video game's navigable space that has narrative potential. Visual clues can relate directly to the main storyline or simply broaden and deepen the back story. In their presentation for the *Game Developer's Conference 2010*, Matthias Worch and Harvey Smith, while employing the general term 'environmental storytelling', concentrated mainly on visual clues within material space (which they call 'player-space'): "Environmental storytelling is the act of staging player-space with environmental properties that can be interpreted as a meaningful whole, furthering the narrative of the game".

86 Cf. Leigh.

Visual clues are everywhere in modern computer games. The game spaces of the *Fallout* or *BioShock* games convey almost their entire back story through carefully distributed and elaborate visual clues, as do many others. Most visual clues are structured after the basic model of detective fiction, where a detective minutely searches a crime scene for clues as to the exact narrative of the crime that has happened there. According to Worch and Smith, "[e]nvironmental storytelling relies on the player to associate disparate elements and interpret as a meaningful whole [and] fundamentally integrates player perception and active problem solving, which builds investment." Thus, visual signs are distributed spatially for the player to encounter. This encounter is non-unilinear, since there is no (necessary)[87] predetermined chronology in which the player perceives the different signs. But by implying that they are the traces of past events, these signs prompt the player to perform an indexical operation, concluding the past events and their correct sequence out of them.

The main premise of detective fiction that follows the archetypical model of Arthur Conan Doyle's Sherlock Holmes stories is that events inscribe themselves as observable traces in space. It is the task of the detective (and the reader as well) to correctly read these spaces for the relevant signs. As these spaces are *created*, they are intentionally filled with such narratively relevant signs. Creating spaces in written text or games alike means giving them meaning. That elements within material space *mean* something, that they are part of the general game's narrative, is one of the main expectations that gamers bring towards their encounter with these spaces. One just needs to think of the earliest adaptations of visual forensic clues into computer games, the so-called point-and-click adventures. The whole point of this particular genre was the expectation that the presented spaces were not merely abstract surfaces with geometrical properties, but contained hidden meanings that needed to be uncovered by the player. A recent example of the use of forensic clues that nicely shows their roots in detective fiction comes from the game *Heavy Rain*, where the player has to search a crime scene (in the aptly titled chapter "Crime Scene") for clues using a futuristic enhanced reality device called 'Added Reality Interface (ARI)'. She can review these clues at a later stage in the form of a (non-unilinear) database and make further research on them in order to better construct the (linear) narrative of the crime. The *Heavy Rain* example shows how next-generation games make use of the enhanced graphics to align the investigative process with other visual media like motion pictures, while commenting on what is possibly the next step in games' narrativization of space: aug-

87 Since spatial design can very well guide the order of perception.

mented reality games take the concept of charging spaces with additional (and narratively relevant) meaning and use it on real spaces.

Not all visual clues are isolated elements or signs that are placed within perceptible space – sometimes it is the whole ensemble of visual elements that forms this perceptible space or a part of it – the landscape – that serves as a clue to narrative meaning. In a pre-scripted way, this is the way that Henry Jenkins' evocative spaces work: landscapes that, by their design, set a mood or atmosphere that contains narrative potential. More interestingly, landscapes in computer games can also reflect, directly or indirectly, the player's actions and tell of their consequences. The most common form of visual landscape clue – one that usually contributes more to back story – is the phenomenon that is comparable to the one known to literary scholars as 'Seelenlandschaft', or, sympathetic background; that is, landscapes that reflect the mood of a protagonist, a scene, or a whole narrative (e.g. the fact that it is raining at a funeral). Jenkins has made the connection to this literary device very clear:

> Game designers might study melodrama for a better understanding of how artifacts or spaces can contain affective potential or communicate significant narrative information. Melodrama depends on the external projection of internal states, often through costume design, art direction, or lighting choices. As we enter spaces, we may become overwhelmed with powerful feelings of loss or nostalgia, especially in those instances where the space has been transformed by narrative events.

But game designers not only already use this method, they can also use it either in the static way of printed literature (the landscape represents a mood that has been predetermined by the author), but also in a dynamic way, that is whenever a landscape's visual look is representative of the emotional or ethical significance of past player choices. One example that Jenkins himself cites is the game *Black and White*, where "the player's ethical choices within the game leave traces on the landscape or reconfigure the physical appearances of their characters. Here, we might read narrative consequences off mise-en-scene [sic!] the same way we read Dorian Grey's [sic] debauchery off of his portrait." Another, more recent example is the game *Prototype*:

> Manhattan Island is one of five boroughs of New York and the setting of *Prototype*. Over the course of the game, Manhattan goes from being (relatively) safe and well-guarded to being overrun by infected creatures and hives. While the military is initially successful with containing the first hives and keeping the populous calm, the situation rapidly deteriorates until the only 'safe' zones are at the very edges of the map. This deterioration of the city can be seen as the mundane advertisements are slowly replaced with quarantine posters and graffiti-ed propaganda along the walls and billboards within the city, while the military starts to take a more proactive role. (Jenkins)

These examples are all representative of a player's *indirect* influence on the gameworld. As games grow ever more complex, the level of interaction with the gameworld (still mostly in the form of destruction) is increasing, making game spaces submit to the player's physical 'narration'. One example for this is what Carson has called 'Cause and Effect' elements: "'Cause and effect' elements can also depict the passage of time. A game character may return to a place that they had become familiar with earlier in the game, only to find it completely altered. This may be due to a cataclysmic event, or the disappearance of elements remembered from a previous visit. 'Cause and effect' elements could also be triggered directly by the actions of the game player."

This can for example be found in *Dragon Age: Origins*, when, after playing the mage's origin story, one returns to the magicians' tower to find the place utterly altered. Many other fantasy role-playing games like *Fable* feature this effect. In these cases, the change of the game space happens in the player's absence and only as a result of the general story and not the player's direct interaction. The same is true for the world-changing events that are introduced into the online-world of *World of Warcraft* through the add-on *Cataclysm*. But it can also happen in the presence of the player and more closely linked to his actions, as in the *Fallout 3* add-on "Point Lookout". Part of the main mission of this add-on happens in a large villa that is being besieged by a group of 'tribesmen'. The owner of the villa gives the player a mission to oppose his main enemy. After returning from the mission, the villa is being blown up just as the player approaches it.

Though the influences on the game's space mentioned in these examples are direct, they are still, in a sense, static, as they still follow pre-scripted rules. Concerning the use of space in computer games, Espen Aarseth has distinguished along "player's level of influence on the gameworld, where some simulation games, such as SimCity or Warcraft, let the player change the world, whereas in other types, such as the adventure games or most 3D action games, the player has no constructive influence and the world is completely static." (*Allegories of Space* 159) This is changing rapidly, though, with the rise of game physics.

Game physics "involves the introduction of the laws of physics into a simulation or game engine, particularly in 3D computer graphics, for the purpose of making the effects appear more real to the observer."[88] Instead of being the pre-scripted decision of the designer, the spatial form of the gameworld depends on the dynamic computation of the laws of physics (however simplified) in response to the actions of the player. Thus, the whole of the navigable space becomes a plastic element into which the player can inscribe her narratives. The malleabil-

88 "Game physics".

ity of space becomes the (narrative) trace of the events that have happened as a result of the player's choices, just like the heart and initials cut into a tree might be a reminder of a romantic encounter below that tree. Game physics dynamise the landscape/navigable space and make it part not only of the pre-scripted, but also of the emergent spatial narrative. So far, and with the exception of games focusing exclusively on construction like *SimCity*, the player's interaction with her environment has albeit been mainly destructive. Many recent games use the high 'destructibility' of their environment as a marketing factor, like *Just Cause 2*, *Bad Company 2*,[89] or *Red Faction 3*.

The second method of environmental storytelling that Jenkins cites is the use of embedded narratives:

> Read in this light, a story is less a temporal structure than a body of information. The author of a film or a book has a high degree of control over when and if we receive specific bits of information, but a game designer can somewhat control the narrational process by distributing the information across the game space. Within an open-ended and exploratory narrative structure like a game, essential narrative information must be redundantly presented across a range of spaces and artifacts, since one cannot [sic!] assume the player will necessarily locate or recognise the significance of any given element. [...] The gameworld becomes a kind of information space, a memory palace.

Embedded narrative encompasses all kinds of explicit narrative content that a player encounters while navigating the world of a video game. These narratives can be either included in the conversations that the player has with non-player characters, or in artefacts that the player discovers, such as diaries, audio- and video logs, answering-machine messages, letters, scrolls, books, etc. Such textual, visual, or auditory narratives embedded into the game-world can heighten the non-unilinearity of the game's storytelling. Though these mini-narratives are usually all part of the storyworld and its meta-narrative (e.g. personal stories of in-game characters, news reports about the general development of the storyworld, myths that explain the storyworld's structure), the player can choose to read them whenever she wants, and the order of their encountering is often not pre-determined.[90] Frequently, piecing the fragments of the embedded narratives together to form a coherent whole is an important task that the player is given

89 "A key gameplay feature introduced by its predecessor, Bad Company, is destructible environments. The improved system is called "Destruction 2.0". It now allows players to completely demolish a building with sustained explosive firepower, resulting in the building becoming a pile of rubble and killing any trapped inside." ("Battlefield: Bad Company 2").

90 Sometimes it is, as in the narrative that forms the background myth of *Brütal Legend*. Though the player encounters parts of this story in different specified places in the game-world in an order that she chooses himself, she will always find the parts in the right chronological order.

('Ask around the village for more information on X'). Sometimes they trigger new quests of their own, as when the player discovers a note left by a non-player character asking for help, or the diary of an explorer that tells of hidden treasures. In their non-unilinear form, embedded narratives are an example of *narrative as archaeology* that is one of the main principles of alternate reality games (cf. Menhard, chapter 4.6.2).

Depending on the type of narratives that the player encounters, gathers, and mentally orders, the result could be a very uni-linear narrative, with only the process of gathering being non-unilinear, or it could remain non-unilinear. In the first case, the embedded narratives are just pieces of a single larger narrative, e.g. the single scattered pages that form the account of a sea voyage and shipwreck. In the second case, the player simply gathers encyclopaedic information, all of which is in itself narrative and contributes to fleshing out the storyworld without having to fall into a necessary sequence, or having to be complete. Fantasy-themed CRPGs like *Dragon Age* that can rely on their players' high interest in the storyworld make heavy use of the latter form. In *Dragon Age*, the player gathers an encyclopaedia, called the Codex, that consists of over 300 different parts.[91] Similarly, after experiencing certain events or encountering certain enemies in *Brütal Legend*, the 'tour book' of the protagonist is updated with readable text. An interesting case with a metaleptic structure can be found in the game *Alan Wake*: during the game, Alan the protagonist discovers pages of a manuscript that he doesn't remember writing. The player can read these pages, and they actually foreshadow events later in the game, thus serving as important gameplay clues and as part of the narrative and its mystery.

The use of embedded narratives can also be a way to make an engagement with the storyworld more optional. This is the case, for example, with *Dungeon Siege 3*, a game that emphasises hack & slash combat gameplay. By conveying most of the narrative information about the storyworld through embedded narratives, players have the option to learn or ignore this information, in contrast to games that rely more on cut scenes. There is often (from the viewpoint of design) a limited control about the order in which embedded narratives are encountered by the player, depending on the degree of uni-linearity that the level design provides. Therefore, in order to be enjoyable, the individual elements need to be more self-contained and not rely too strictly on a causal sequence. An example of this are the 'web of intrigue' sequences in *Prototype*.

Embedded narratives can be compared to a type of experimental narrative text that has been called encyclopaedic narrative. Since the encyclopaedia is a

91 For a detailed list of the codex entries, cf. "Codex".

form that was developed under the conditions of the codex (a continuous scroll would make a rather impractical encyclopaedia), the narrative potential of this form was first explored in the printed form. The most well-known example is Milorad Pavic's *Dictionary of the Khazars*. Another example is Andreas Okopenko's *Lexikon einer sentimentalen Reise zum Exporteurtreffen in Druden*, published 1970 in Austria. These texts are organised in the form of an encyclopaedia or dictionary. This means that the narrative is not told as a series of events arranged in a specific order in which they are to be experienced (linear) but is divided into different sections dealing with aspects of the storyworld that are arranged in an alphabetical order.

Encyclopaedic narrative can only be counted as a narrative device of the game when the collection of narrative information is directly linked to gameplay actions such as moving to a certain position in space or encountering a certain creature. Often, the creators of a game instead use (narrative) information on the game's storyworld in an encyclopaedic format as a transmedial device, by offering the encyclopaedia outside of the game proper, in the form of handbooks, wiki-structures (though those are usually fan-created) or even electronic databases that are not part of the game and can be accessed in their entirety right away.[92]

The use of encyclopaedic narrative is a testimony to the emphasis that those games put on fictional world-building. It is therefore often used in those narrative genres that have traditionally been most interested in creating elaborate storyworlds that diverge in multiple ways from our perceived reality, such as fantasy or science-fiction (as in *Skyrim*, where the player can find more than 300 books throughout the world).[93] But encyclopaedic narrative can also be used to help the player experience narratively a storyworld that is historical in nature. This is, for example, the case in *Assassin's Creed II*, where the player collects information on historical architecture, art, and persons.

In some games, the encyclopaedic narrative can even dynamically adjust to the player's experience. In both *Red Dead Redemption* and *Deus Ex: Human Revolution*, the player will encounter newspapers throughout the game that comment on actions that the player has made so far (the *Fallout* and *Fable* games among others convey the same kind of information through unprovoked non-player character conversations that the player can 'overhear').

While so far interest and research has been concentrated exclusively on space in computer games as an aspect of the *player's* perception and cognition, some of the more recent games make it worthwhile to consider the spatial perception of

92 *Metal Gear Solid 4* offers such a database through the Playstation Network.

93 One user managed to extract the text of all the books from the game's installed files and offered them as a collected download independent of the game ("Dovahkiin Gutenberg").

in-game characters as an interesting extension and dynamization of the concept of event triggers. Especially through the heightened emphasis on tactics of stealth in games like *Metal Gear Solid 4* or *Assassin's Creed II*, it becomes more and more important for the player to consider what non-player characters can see, adding an interesting (and narratively relevant) dimension to her cognitive construction of the game space. Suddenly, what the non-player characters can and cannot see becomes an event.

Many stealth games visually incorporate the information whether the player character is visible to other characters or not. In *Assassin's Creed II*, for example, there are signs above hostile non-player characters indicating how 'interested' the non-player character is in the player character (depending, among other things, on whether the player character is in the non-player character's line of sight) and a colour coding on the mini-map indicating when the player character is not visible to any non-player character. The 2010 game *Splinter Cell: Conviction* has a feature called "the 'Last Known Position', which occurs when the player breaks the line of sight of an alerted guard. This creates a visual silhouette of where the guard thinks Sam is, allowing the player to strategically flank his enemies".[94] This development mainly relies on the heightened efficiency of the non-player characters' artificial intelligence, and it is to be expected that this feature will become more and more important in future games, dynamizing space and the player's conception of it. For example, it will most likely dynamize the concept of the event trigger: instead of patiently waiting while the player character approaches close enough to a non-player character to start a conversation and trigger an event, the non-player character might start to react on his own as soon as he sees the player character, for example by waving and calling (or running away screaming). While the event trigger is normally fixed in space, it is now dependent on the variable position of the (moving) non-player character.

One area that is not explicitly considered in Jenkins concept, but that needs to be looked at closer in order to better understand the narrativization of space and uni-linearity, is the doubling of the player's perception of space through an experiential (first- or third-person) and a cartographic view; William H. Huber citing David Harvey talks of 'material' and 'representational' spaces (Harrigan and Wardrip-Fruin 376). As Espen Aarseth has noted, the fact that almost all 3D games double the player's perception of space with a 2D representational perspective "stands in striking contrast with the prophesies of certain virtual reality proponents who believe that the 3D interface will render all other perspectives obsolete" (*Allegories of Space* 157). Representational spaces are still important for

94 "Tom Clancy's Splinter Cell: Conviction".

the player's understanding of material spaces, and both perspectives can contain (non-unilinear) narrative markers or (linearizing) directional suggestions. While narrative markers are all elements with narrative potential that refer to the intradiegetic level of the storyworld (stories that have their significance in being part of the storyworld) and that are encountered by the player's character, the directional suggestions' ultimate target are the extradiegetic, gameplay-related decisions of the player herself, e.g. narrowing her possibilities of movement by pointing towards the best direction to take.

Everything that appears as part of the material space must be intradiegetically motivated, and narrative markers in material space are identical to what has been discussed earlier as visual clues. Yet sometimes, visual clues within material space can also serve as directional suggestions. The easiest form of this are road signs that the player might encounter, but also traces or hints left by non-player characters that the player is following. Carson has called the latter form 'Following Saknussemm':

> Derived from the story Journey to the Center of the Earth by Jules Verne. In Verne's story the main characters follow a trail of symbols scratched into subterranean walls by their adventuring predecessor, a sixteenth century Icelandic scientist, Arne Saknussemm. In this way, the game player is pulled through the story by following 'bread crumbs' left behind by a fictitious proceeding game character. Whether you create notes scattered throughout your environments, or have the game player follow the destructive path of some dangerous creature, 'cause and effect' elements will only heighten the drama of the story you are trying to tell.

These directional suggestions linearise space, but in a less mechanic way than those that are positioned in representational space. Part of the reason for this is that diegetically they are positioned on a lower level, and have therefore less authority (the road sign could be simply wrong, or misleading), while at the same time not breaking the narrative immersion.

A borderline case, but very important as a tool for the narrativization of space are the suggestive camera movements that effectively constitute in-game mini-narratives that 'explain' certain spaces, as with certain spatial riddles in the *God of War* games. These are a special form of the establishing shot known from film theory (or rather, a further evolution of it) that are used to explain and narrativise the game's navigable space (by implying that the space should be engaged in a sequence). Formally, the main difference to the mostly static establishing shot from film is that it involves a camera *movement* that effectively temporalises space by continually showing parts of it in a certain order in time. The goal of these shots is usually to acquaint the player not only with the dimensions of the space she will from then on navigate, but also with the special obstacles that this

room provides for her navigation, as well as possible solutions for these obstacles. These establishing shots serve as implicit directional suggestions while at the same time helping the player read the space and the story it contains (e.g. the riddle of how to cross it).

Maps can tell stories, and this is by no means restricted to maps in computer games. Topographical details can tell stories about the terrain and its possible navigation through forests, mountains, glaciers, deserts, streets, etc., the positioning of cities and villages can imply stories about how a land has been colonised etc. One thing that is rather specific to computer games is that maps are not static in what they present, but respond dynamically to the actions of the player, especially her spatial exploration. This is usually seen in the gradual filling of a previously empty or black map with markers for those spaces that the player has already explored, implying the story of that exploration. Marked places on the map are often even hyperlinked to the questlog, chronicling either done deeds, or future tasks. Moving over the symbols for side missions in this map for *Brütal Legend* will reveal information about the type of mission. Narrative markers within representational spaces are highly non-unilinear, as their ordering principles cannot be chronological.

The main use of maps and other representational spaces is usually orientation, and that means: enabling the player to know in which direction she wants to go next. That is why they not only consist of iconic signs, but also of indexical signs that tend towards hierarchization and therefore linearization. While the spatial distribution of side and main missions on an in-game map is non-unilinear, their semantic differentiation into 'main' and 'side' already prioritises the main missions; and since the main quest chain is usually progressive (different parts need to be solved in a pre-set order), the player, while looking at such a map, gets a number of possibilities where she *could* go (the side missions) and one markedly different suggestion where she *should* go (the next part of the main quest).

Most of the linearization is achieved through the (functional) doubling of the perspective. The view of the map gives the player her long-term destination, but only in combination with her view of the material space does it actually tell her *where to turn/go next*. This becomes most obvious when material and representational space are combined on the screen. Below is the third-person view in *Assassin's Creed II*. It contains a fragment of the map view in the lower right corner that indicates both the direction that a desired destination is at as well as the distance to it.

The fascination with video games' abilities to narrativise space should not lead us into neglecting the fact that the perception of a game's space can also lead to a de-narrativization. This is because so many of a game's spaces are tied to its

gameplay objectives. Levels need to be crossed as well as bridges or doors, and there are not few games that define their winning state as a position in material space that the player character needs to occupy (e.g. all platforming games). If a player is therefore concentrating merely on the winning conditions of a game, this will lead to a perception of space rather in abstract than in semanticized terms. While for a player interested in immersing herself in a fictional gameworld the existence of a wooden door that cannot be broken even with a grenade launcher is a break in consistency and an aesthetic flaw, for someone whose sole goal is to finish the game, it is merely a fact that needs to be accommodated by gameplay decisions. Players who take part in tournaments often reduce the level of detail in the graphic representation of material space, making it less realistic in order to concentrate better on the game's objectives. Others compete in what is called speedruns. A speedrun is a play-through of a video game performed with the intent of completing it as quickly as possible, optionally under certain prerequisites, mainly for the purposes of entertainment and competition. Speedrunning often makes use of shortcuts in the game structure that have developed out of the game designers' oversights and that are inconsistent with the narrative development of the game (the player might completely skip a quest in order to save time, but the narrative presentation appears as though the skipped quest had been completed and were therefore a narrative fact of the gameworld). Also, exploiting glitches sometimes means perceiving the gameworld not as a fictional world with physical rules similar to the real world, but as a playground with a completely detached set of rules. The most famous example was the discovery in early first-person shooters that the player character could use her own rocket launcher to propel herself to places he could not normally reach by jumping.[95] Speedrunners also choose to ignore all passive narrative elements like cut scenes, further removing narrative proclivity from their experience of the games. Speedrunning and competitive gaming can therefore act as a reminder that semanticization is not only unnecessary for games, it is also not a unidirectional development always leading to a higher degree of semantic perception.

95 For an example, cf. "Quake 3 – Amazing Rocket Jumps".

5 Choice and Narrative in Video Games

> Remember, gamewrights, the power and beauty of the art of gamemaking is that you and the player collaborate to create the final story. Every freedom that you can give to the player is an artistic victory. And every needless boundary in your game should feel to you like failure. (Card)

FNs must at least provide one node that can lead to multiple continuations – otherwise, they're not FNs –, but they *may* also present the reader/player with a *choice* between these multiple continuations. Though there are other forms of FNs in which an active choice between the different continuations is not possible, in a medium like video games the moment of choosing, located in the nodal situation, becomes one of the crucial aspects. No other medium provides its users as consistently with nodal situations that involve choice as do video games. All video games are rule-bound systems, and these rules constantly define the range of options that a player has in a specific situation (that is: whether the player has a choice or not, and which choice or choices) as well as the consequences of actualizing each of these options. Choice is what video games are all about, even though the reach of agency is not always as extensive as it might be perceived by the player. This chapter will first try to anatomise choice situations in general and especially as they are encountered in games, and then look at the specific way that player choice is implemented in video games.

5.1 The Anatomy of a Player Choice

What's in a choice? What are the elements that constitute a choice, understood as a conscious decision? Salen and Zimmerman define choice in games as a unit of action and outcome, and further anatomise this into a series of five aspects:

1. What happened before the player was given a choice?
2. How is the possibility of choice conveyed to the player?
3. How did the player make the choice?
4. What is the result of the choice? How will it affect future choices?
5. How is the result of the choice conveyed to the player? (Raessens and Goldstein 59–80)

One might want to add the question 'What information does the player have about the effect of her choices?' This is implied in 4 and 5, but the information is not necessarily restricted to previous choices. In another attempt to classify

the range of player choices (or, as she calls it, types of interactivity), Marie-Laure Ryan talks about a scale of intentionality:

> Types of interactivity can [...] be distinguished on the basis of the freedom granted to the user and the degree of intentionality of his interventions. The bottom of the scale is occupied by what one may call [...] a 'reactive' interaction, which does not involve any kind of deliberate action on the part of the appreciator. [...] One step higher on the intentional scale is a random selection among many alternatives. When the user takes action deliberately but cannot foresee the consequence of his actions, the purpose of interactivity is to keep the textual machine running so that the text may unfold its potential and actualise its virtuality. Such is the random clicking of many hypertexts. But selective interactivity can also be a purposeful action. In a computer game, for instance, the player may be offered a choice between two paths, one of which leads to success and the other to failure, and the game may cue the player as to which path is the good one. In the fullest type of interactivity, finally, the user's involvement is a productive action that leaves a durable mark on the textual world. (*Narrative as Virtual Reality* 205)

This account seems to mix different aspects, though, that should better be kept separate in order to fully understand the way that choices function in video games and other FNs. While Ryan's concept of a 'reactive' choice is concerned with the type of motivation for a choice, the *randomness* of a selection as well as what she calls 'selective interaction' is rather related to the amount and type of information that is given about a choice. Her idea of the 'fullest type of interactivity', finally, is concerned with the *range and quality of consequence* that a choice offers. A further problem is that intentionality is not observable and, as something exclusively ascribed to the player, off limits anyway.

So we are back to the question: What is a choice? First of all, a choice situation contains at least two different options. This is the core requirement, and in this sense it is identical to the basic definition of the nodal situation. Whether the person making the choice is aware of being in a choice situation is not important for its being a choice situation, and yet in a large number of cases (and especially in those cases used by games or other FNs) such an awareness is indeed given. And especially when looking at specific player choices, we can see that choice situations are not only regularly recognizable, they are also invested with some form of *motivation*, that is: the player will be interested in the outcome of the choice and will expect one outcome to be better than another. One might therefore further distinguish two special types of choices, the informed (or conscious) choice and the motivated choice. A motivated choice must also be a conscious choice, but not vice versa.

The aspect of information is crucial in determining the nature of a choice situation. First of all, there must be an indication of the existence of differing options for the participant to become aware of having to make a choice. The options will

be perceived as differing if the information indicates that their outcomes will not be identical. There is a state of affairs before the choice, and a number of possible states after the choice. If all possible 'after' states are identical to each other or even to the 'before' state, the options have no differential consequence, and the choice is therefore not a real choice after all.

This kind of information is important for the motivation of the choice. In order for a choice to be motivated, one outcome must differ from the other, and be valorised higher than at least one other. In normal life, the valorisation, if it is in fact motivating, is always ultimately based on some emotional preference, though it will often be explained rationally, since it is a consequence of the preference. According to Michael Allingham, "[a]ll choices [...] arise from both the heart and the head. The heart provides the passion and the head the reasons. Choices based on the most minute reasoning but lacking any desire are vacuous. But desire without reason is impotent" (2).

One important aspect of choice is therefore how informed it is – that is, whether we choose based on knowledge or arbitrarily. Choice situations differ in the amount of information that is given about the consequences of the different options. A choice situation can contain

- no information: the agent has no reasonable knowledge about anything that might result as a consequence of the options
- incomplete information: the agent is provided with some knowledge about possible outcomes, but no certainty in relation to the probability of the outcomes, and/or the completeness of information about outcomes
- complete information: the agent is provided with certain information about all consequences of all options

Depending on the extent of information about the consequences of a given choice, the nature of that choice will differ: In the case of no information, the choice will be completely arbitrary and cannot therefore be made rationally. Also, there cannot be any desire attached to the choice, as there can be no reasonable expectation connected to it, other than those constructed by the agent without any rational basis. Such a choice would hardly be experienced by the agent as a choice at all. A possible example would be a choice between two identically looking options with no further information.

On the other end of the spectrum, if the agent has complete information, the choice equally loses its experiential quality as a choice. If there is no differential valorisation of the known outcomes (that is, if one outcome is not perceived as better than the other), the choice is completely indifferent. If there *is* a differential valorisation, and there is complete information about this (which also implies that the valorisation is not conflicted), then, at least rationally speaking, there is

no choice situation at all, as there is only one rational option. An example of this would be the instruction to 'press x to win or y to lose', assuming that the agent *wants* to win.

Therefore, the choice situations that are perceived as interesting in a structural sense[96] provide only incomplete information. This means that there are conflicting arguments for and against each choice that might have probabilities, but no certainties attached to them. This is experienced as a meaningful choice, where the player either has to act according to probability (uncertainty) or has to hierarchise incompatibles.[97] Some degree of information about a given choice seems to facilitate the feeling of agency, as agency is experienced as pleasurable especially when we are able to make meaningful decisions within the story/game universe. When a choice has to be made completely arbitrarily, there is only interactivity, but no (or a very low) sense of agency. Also, the information provided is an important link between gameplay concerns and the fictional immersion by the player.[98]

Not all choices need to be motivated. In real life, it is entirely imaginable that I am presented with a choice between two options that I am completely indifferent to. One might only qualify this to say that, though motivation is not necessary for the existence of a choice, it is still necessary for an agent actually *making* the choice. No one will make a choice when there is absolutely no motivation to do so. Note that this does not necessarily mean that the agent prefers one of the options originally offered, but that 'not choosing' is regarded as a further option which is in this case considered less desirable than 'choosing to choose'.

But whereas choice situations in real life are not designed to be actualised, in games they are. Again, one might make the claim that in *paidea* games, as there are no rules, there is no necessary motivation to actualise one of the options that the 'player' has, but I would argue just as above, that if the player has absolutely no motivation, she would simply not do/choose anything. The motivation might not be stated explicitly in any of the rules, but for a *paidea* game to start, players will have to provide it themselves. In ludus games, on the other hand, motivation is hardwired into the choice situations that the game offers as soon as it acquires a main objective. Every choice can then be questioned as to whether it is condu-

96 The term 'interesting' should in this instance not be taken in any psychological sense, meaning that the player has a high emotional involvement in the choice or its outcome. A person who bets all of his money on a single coin toss will be very interested in the relation of the outcome to his choice, but the choice – being perfectly arbitrary – is still not an interesting choice.

97 Cf. also Jeffrey 1.

98 According to Sid Meier, "a [good] game is a series of interesting choices. In an interesting choice, no single option is clearly better than the other options, the options are not equally attractive, and the player must be able to make an informed choice." (Rollings, and Morris 38)

cive or detrimental to achieving that objective, and the player will be motivated to choose because she expects one of the choices to be the most conducive one. As we have seen, this situation is complicated cognitively and psychologically through the fact that in most cases the player has only incomplete information about the consequences of the options, or even the options themselves. Thus the player might be motivated to make the best choice, but is simply unable to know which one it is.

And furthermore, as we have seen, video games often contain hierarchical levels of objectives, or even multiple objectives that compete for dominance (as in the case of open-world games with strongly motivating side quests that have a tendency to keep the player side-tracked from her main quest goal). So the seemingly straight-forward fact that all choice situations in ludic games have a clear motivation can become, in actual gameplay, very complicated and much less obvious. This complexity opens player choices again for more paidic attitudes, so that one might differentiate two basic frames of mind to engage a node that provides incomplete information, attitudes that the reader/player brings towards them, but that can also be strongly (though not always successfully) enforced by the nodal structure and also the theme of the narrative. These basic attitudes can be called *explorative* and *teleological*, or paidic and ludic. The main difference is that the teleological attitude subscribes to the dominance of the game's overall objective and therefore ascribes a clear hierarchical valorisation to the options offered by the node, while the explorative attitude does not, or not to the same extent. This means that the teleological attitude strongly expects one of the options to be better than the other, to the point where one option must be the 'right' and the other the 'wrong', implying that there is an 'aim' (telos) to the act of (repeated) choosing. There is a desired (though not necessarily known) outcome, and it is the task of the reader/player to find the right 'path' (series of choices) that leads towards this outcome ('you win!'). The explorative attitude, on the other hand, is more playfully fascinated by the fact that there *is* more than one option. Choices are made less in the expectation that they will lead to a desirable or undesirable result, but out of curiosity – mainly, as has been described earlier, because *not choosing* seems to be the least desirable option.

The two attitudes also have affinities to certain nodal structures. The teleological attitude works best with unidirectional and progressive paths, since unidirectional paths mean that decisions cannot be taken back, emphasizing their consequence. This, in combination with the expectation of a 'right or wrong' choice makes such forms suspenseful. The explorative attitude, on the other hand, works best with bi-directional or circular paths that allow a re-visiting of nodes. Since different options are seen as equally valid (though not identical), there is a joy in actualizing both of them, creating in the mind a much more

complex (because non-unilinear) mental image of the narrative than is the single-string actualization that a teleological performance produces.[99]

As to information, choices should be more informed for the teleological attitude and can be more random for exploratory modes. The two attitudes can be used as a further means to distinguish between different genres that employ nodes. This attitude characterises for example the main difference between Choose-Your-Own-Adventure narratives and (literary) hypertexts. In video games, the teleological attitude is strongly present in the expectations that one can 'win' a game, the explorative attitude more in the idea (made popular with recent sandbox games) that one can 'complete' a game (that is, actualise all of its options). The explorative element also comes to the forefront in the element of spatial exploration.

Choice situations can be either a-temporal or have a temporal dimension, which means that there might be a limited amount of time during which the options are available, or that – after a finite amount of time – not making any choices will produce an outcome that is different from the choice situation and that therefore constitutes a choice in itself. In real life, all choice situations have a temporal dimension. Given the laws of thermodynamics and the inevitable passing of time, there is no choice that can be postponed indefinitely without any consequence, though the temporal dimension might be so large that it is not perceived as important at the moment. Thus, it is one of the exclusive prerogatives of all games that they can create a-temporal choice situations. Of course, this a-temporality is an illusion that is only valid within the 'magic circle'. Since that circle itself is again dependent on real life, it is subject to the passing of time. But within the gameworld, time *can* be paused, and therefore, a decision can theoretically be postponed indefinitely without consequences. The ability of pausing time is therefore dependent on the prior creation of a gameworld that is distinct from the real world. The pausing can then occur because of a switch from gameworld to real world – children interrupting a game of make-believe in order to eat lunch, or saving and exiting a video game in order to continue playing later – but there are also many games that allow for pauses within the gameworld. These are the games whose concept of time is at least partially turn-based, that is, the passing of event time is restricted to the *making* of a turn, which does not necessarily have an equivalent passing of play time.[100] In a regular chess game, event time only

99 The explorative mode is also the one to which the 'putting on the backburner principle' (cf. Menhard 3.13) should be more easily applicable, since a storing and revisiting of stored nodes is only possible when the narrative is not unidirectional.

100 Even games such as ice hockey, or, to an even greater extent, baseball, that are predominantly played in real time and that depend on physical environments as opposed to purely ab-

passes when a piece is being moved, and though that moving can take play time, it need not, since it could be merely abstract, or the move could be finalised by a single click of a button. As will be shown later, the temporality of choice situations in a video game is important for classifying them in relation to agency and semantic perception.

Though video games as a medium are perfectly suited to create turn-based gameplay, and there are advantages to the form, the structure of non-timed turns completely ignores the core distinguishing feature of a video game as a dynamic game system. Games can create non-temporal choice situations, but they are better than any other medium in creating timed choice situations. A look at video game history emphasises this. While most of the first games were based on very strictly timed situations, even among those genres that used to rely on turn-based gameplay, such as strategy games, construction games, and role-playing games, the amount and importance non-temporal choices has been reduced continuously. For example, the first two games in the *Ultima* series, published in 1980 and 1982 were purely turn-based. But already the third instalment in 1983 introduced the element of timed turns. If the player waited too long to make a turn, the system would register her decision as 'pass' and automatically continue with the next turn.

Besides turn-based gameplay, video games have from the beginning put a tremendous importance on timed actions or reactions – they are associated much more with breathtaking and speedy action than with prolonged contemplation, after all. The overwhelming number of such skill-based reactions do not constitute interesting choices from a narrative point of view, and yet, even heavily story-focused games today employ a complicated mixture of skilled reactions, turn-based reactions without any temporal dimension, and choices that are temporal but still leave enough time for deliberation. A game like *Fallout 3*, for example, has enemy encounters that can be either played like an intense first-person shooter with a large number of skilled reactions or as a turn-based game that yet takes real time into account. On the other hand there are dialogue choices of major importance for which the game is infinitely paused. The game has a diegetical clock, meaning that time passes continuously in the gameworld as it passes in the real world, with regular (though foreshortened) day-and-night cycles, so that some non-player characters might be asleep or at work depending on the time of day one meets them. And finally, though the narrative would imply that time is running out for the completion of the game's main objective, the game will in reality allow the player an infinite amount of time to get there without penalizing her.

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stract ones, know gameplay-internal pauses.

Choices without any temporal dimension and therefore without time limit can be classified as deliberate choices. Reflex does not play any part in this case, there is no direct necessity for the choice. Thus the motivation for making a choice at all and the motivation for making a specific choice are purely based on the semantic level of the game, on the information that is provided about the choice. By interrupting the narrative consistency of diegetic time, the game paradoxically strengthens the emphasis on the narrative. In cases where there are time limits, choices are positioned along a range that reaches from decisions that grant enough time for deliberation but must be made in something approaching real time to decisions that must be made within fractions of a second, with highly negative outcomes for not making any decisions. Those are what could be called reflex choices.[101] They are still choices, and they are still based on cognitive processes, but in most cases they happen so fast that the player is not even aware of any deliberation.

The two most common situations for reflex choices are some types of physical movement and combat. Reflex choices based on physical movement are most common in so-called platforming as well as in all racing elements. Platforming refers to gameplay that tasks the player with navigating through a physical environment full of obstacles. This navigation is complicated by two facts: first that the player often needs to base motion decisions on the outcome of previous motion decisions (for example, jump while already running, or making a – physically impossible but very common – 'double jump', where a second jump needs to be perfectly timed within the first jump in order to reach a desired position); and secondly, that parts of the physical environment are themselves in motion, forcing the player to react to these motions in time. The classic example for this is the game *Donkey Kong* (1981), where the player character needs to constantly jump over rolling barrels.

An example for an intermediate type of timed choice situation is the 'Active Battle Time' (ABT) system first developed by Hiroyuki Ito for the game *Final Fantasy IV* in 1991. Whenever a player encounters an enemy, she enters ABT for the combat. The battle is still turn-based, meaning that the player can initiate an attack or other action when it is her turn, but the turns are not distributed a-temporally. In fact, every participant in the battle (player characters as well as enemy non-player characters) have to wait for a specific amount of real time for their turn to come. Since the time for each participant is different according to their individual character attributes, the order of turns might change throughout the battle. After the player's pause time has passed, she is allowed to issue a

101 For a similar distinction, cf. Wolf 24–26. Josh Bycer, in his article *The Abstraction of Skill in Game Designs* distinguishes between what he calls levels of "skill abstraction".

command. This enforced pause can be used for strategic deliberation (there are usually different options for attack or defence available to the player), but it is a limited time, after which decisions should not be delayed any further.

When it comes to those pure reflex choices where the timing is extremely short, an important precondition for their quickness is that there is no ambiguity about the expected outcome of a choice. Though there might be ambiguity about whether the player will be able to actually and successfully make the desired choice, the successful outcome itself is perceived by the player as clear. In most first-person shooters, for example, the player is never in any conflict about whether she *wants* to shoot approaching enemies, the desirability of shooting them is an established fact that needs no deliberation. But even these strongly reflex-based and time-constrained situations can be complicated with regard to the desirability of outcomes, for example through the inclusion of bystanders or hostages that must not be shot. This is regularly employed in games like *Modern Warfare 2*, *Red Dead Redemption*, or *House of Dead – Overkill*. Here, the player needs to make a minimal assessment with each target, deciding whether it is desirable to shoot or not. Still, such decisions are made under such time pressure that the player is hardly aware of them.

One might compare this situation with one in which the player is able to choose between a confrontational and a stealthy approach to overcoming an obstacle. In order to get to a specific point, the player needs to get past an armed guard. The guard, who is not aware of the player yet, walks into her direction. The player can now either shoot the surprised guard, or hide somewhere before the guard has reached her, and continue on her way once the guard has passed. Thus, a time constraint is present, but it leaves enough time for a more thorough deliberation on the course of action than the *Modern Warfare* game. The player might consider the danger of alerting more guards through the gunshot and the danger of being detected should the guard turn or the player make a noise. The player might even have time to question the ethical validity of one action over the other.

As we have seen, not all player choices are equally optional. This is first of all dependent on the temporality or a-temporality of the choice situation, but also on the function and valorisation of the 'no choice' option. Concerning the latter, one can distinguish between choices in which the 'no choice' option leaves the 'before' state unchanged and those where the choice is made under the condition of a necessary change of the state. In this case, the 'no choice' option means that this change occurs. The first type would be exemplified by the choice between painting a white wall red or green or do nothing at all. Not choosing between red or green means that the state of the wall remains unchanged. The second type would be exemplified by the choice between eating a cheese sandwich, a

ham sandwich, or nothing at all, with the precondition that not eating anything will lead to the feeling of hunger. Note that the second type necessarily involves the element of time (the chooser becomes hungry over time) while the first type ignores time (as we have discussed, given a large enough amount of time, every state of affairs will change without direct choices having been made – so for example the white wall might get stained or dull).

The first type is not necessarily devoid of motivation, though. Even though the 'no choice' option will leave the state of affairs unchanged, the changes introduced by one or all of the 'action' choices might still be preferable to the original choice. If it is my express desire to add some colour to my room, then I will definitely value both red and green higher than white, and will be consequently motivated to make a choice after all. The difference is that I am making this choice from the desire to turn the state of affairs into a better one, whereas in the second type, my motivation for making a choice is mainly to prevent a change for the worse in the state of affairs.

These two types are important for understanding how choices work in video games, and especially to see how many of the choice situations in games involve the second type. It is one of the main features of video games that they simulate dynamic systems, systems that are capable of changing their state of affairs. These changes *can* be brought about by the player's input. If a player opens a door, then that door's state changes from closed to open. This is the actively nodal, or rather, the *re*active part of the game, but video games share this feature with other games such as Peg Solitaire. In a game of Peg Solitaire, there are only choices of the first type. But game systems also change without any input from the player. This is what we have called the dynamic nature of video games, the feature that differentiates them from Peg Solitaire. Game systems can create changes of the game state independent of player action, leading to the creation of type two choices. In fact, almost all video games that are not turn-based (and that therefore do not discontinue the flow of time) have for the longest time been strongly dominated by this type of choice. One might just try to imagine a non-dynamic, though *inter*active or *re*active version of *Space Invaders*: the player can move her battleship across the screen, can fire lasers, and when the laser beams hit the alien spaceships, they explode – but the alien ships *do not move on their own*. Voilá interactivity and perfect boredom. Video games would have hardly become such a successful medium if they had merely allowed the players to respond to responses, but had not challenged them to respond to unsolicited and unprovoked changes.

From the perspective of game design – a perspective that carries as its main goal the player's 'fun' – there is only a rather limited appeal to type one choices, and they have consequently played only a limited role in games. A type one choice could be seen in the decision of a player of a shoot 'em up to continue with a new

level after the previous level has been finished. Choosing not to continue will leave the game state unchanged, there are no penalties for not playing further. But there is a desire to change at least one element of the game into a better state, and that is the game's score, which will only increase when the player continues to play. Another desire would be to have fun while playing the level, but that fun is mainly generated through the game actively introducing changes to the game state and forcing the player to react in order to avoid unwanted consequences. Automatically scrolling games are perfect examples for this: while the player has a limited amount of freedom to move around the screen, the whole gameworld is continuously moving past her, so that enemies, targets, or obstacles inevitably approach, forcing reactions if the player desires to avoid being destroyed. An even more clear-cut example is the feature of what has sometimes been called an 'advancing wall of doom'.[102] Here, a dangerous threat is advancing spatially on the player, who has to outrun it in order to stay alive. This could be rendered as an advancing wall of fire, continuously rising water levels, a time bomb, or the shrinking red hot walls in Edgar Allan Poe's "The Pit and the Pendulum".

As has been shown, type two choices are created by the desire to prevent the state of the gameworld from becoming worse – to ensure the safety and continued existence of the player character, and possibly to prevent the destruction of the gameworld. Type one choices, on the other hand, are motivated by the desire to ameliorate the state of the gameworld. It should be obvious that the success of type one choices is heavily dependent on a player's *semantic* investment into the gameworld. It is dependent on how much the player *cares* for the gameworld and what goes on in it. Type one decisions are rarely made for very abstract motivations. One might think that such an abstract motivation would be the desire to 'ameliorate' the particular aspect of the gameworld that is the game's score. But, strictly speaking, this is not a motivation within one game, but between different runs of a game. It is a motivation that transcends a single run, because no single game score can be motivating unless when compared with the scores of other runs.

It is clear then that type one choices could only gain in prominence with the increasing verisimilitude of gameworlds. As this choice contains the desire to ameliorate an aspect of the game state, the motivation for it will rise with the complexity and 'life-likeness' of the aspects in question. One can note that type two decisions are related mainly to combat situations, and type one often to construction options. When looking at games with construction gameplay, one can further differentiate between different mixtures of type one and type two:

102 For an explanation and countless examples, see "Advancing Wall of Doom".

- Predominance of type one: especially in its 'Classic' mode, the game *Minecraft* is exclusively focused on construction, with the amelioration of the gameworld the only motivation for play
- Balance of type one and two: most construction games like *SimCity* derive their initial motivation purely from the desire to create, but involve the creations in a complex and dynamic system that will eventually also force reactive decisions by the player. Thus, building houses in a city will increase inhabitants, but will also create the demand for food over time, forcing the player to create farms and so on.
- Predominance of type two: most real-time strategy games like *Starcraft* fall under this category, as the main initial motivation for construction is the expectation that an enemy is doing the same simultaneously, and the main part of the game combines dealing with the hostile actions of the enemy, an activity that merely involves construction

The aspects of time/timelessness and necessity/optionality show not only that player choices can be vastly different in their nature (from using pure reflex for dodging oncoming obstacles at full speed to endlessly pondering over the placement of a factory within a city, or having trouble to decide which of the factions of a civil war to support), but that these changes demand differing degrees of involvement with a game's meanings, its fictional embedding and, ultimately, its narrative. There can be choices that are made purely with a regard for the gameplay, that indeed make the player forget about a game's fiction and concentrate purely on a game's manual challenges. Statistically, such skill-based reactionary choices are by far the most common choices in video games. But, as we have seen, video games also enable choices that leave enough time for deliberation, and for differential valorisations of options that can only be made when the player takes into account the meaning of the gameworld. Obviously, it is such choices that a perspective on video games that focuses on their ability of creating non-unilinearly evolving storyworlds is most interested in. The following will therefore look at what happens when choices acquire meaning for the player.

5.2 Choice and Meaning

At their most abstract level, player choices are merely choices between a number of options that the rules of a game allow at a specific point in the game. Viewed from the perspective of the game mechanics, these choices have no significance beyond the function of the outcomes of all choice options in progressing the game

from one predetermined state to the next. By looking at the underlying game mechanics, all choices can be reduced to functions in the game progression.

In this sense, player choices in video games can be fully described in gameplay terms, for example by referring to objective aspects of the game such as numerical values (the effectiveness of one weapon over another, when weapons have an 'attack value') or physical positions within the game space. Also, when restricted to that perspective, player choices should theoretically be engaged by applying what one might term gameplay rationality. The mechanics of player choices are designed with a *homo ludens oeconomicus* in mind. The idea of gameplay rationality refers to the fact that from the position of game design (that is, with complete information about all choice situations), player choice will either have a clearly preferable option or be irrelevant. In both cases it means that the choice is not truly a choice. To fully work, gameplay rationality must presuppose that

1. there is full information and that
2. the fictionality of a game is of no concern.

The first is given because, as created systems based on the discrete mathematical units of code, video games theoretically only contain choice situations with full information. There is no situation in which, from the perspective of the game's design, a choice is not either necessarily obvious or irrelevant. This means, paradoxically, that from the vantage point of the game's design, *all* choices in video games are necessarily uninteresting. Therefore, video games need to employ three tricks to make them appear interesting to players: making obvious choices physically difficult to achieve, keeping the relevance of a choice ambiguous by not providing full gameplay information to the player, and sometimes at the same time providing additional gameworld information. The first mainly concerns what has been described earlier as skilled reactions, choices that are made with little ambiguity (the player has no doubt that she needs and wants to shoot the ugly monster running up to her) but under high time pressure (the monster is fast).

Of more interest from a narrative perspective is the second trick in combination with the third. Because even if choice situations contain complete information from a game design perspective, and anything that does not concern gameplay is irrelevant, this is not how players will perceive them when they are being offered. Instead, they will often be provided with only incomplete information as to the availability and number of options, and especially the consequence of the different options. The player is therefore often (indeed most of the time) unable to apply gameplay rationality. What she gets instead is what has been described earlier as the semanticization of rules, that is, information that is in some way connected to the choice situation (for example by being used as a descriptor of

the situation, by calling a door a door or by showing the image of a door), but that is not necessarily connected to gameplay relevance – the player might see three doors, but only two can actually be entered. For the player, the situation seems to contain the information 'three doors to choose from', though this is not true.

In actual game performances, gameplay rationality is often influenced or even substituted by the player's considerations of the *meaning* of a choice situation. The way the player perceives them, choices are not only functions in the game's structure, they are also regularly presented as meaning something, as representing something other than their pure function. This combined with a common lack of clear or complete gameplay information means that, for the player, many choices cannot be understood but by referring to the specific semantics that a game creates, and consequently its fiction and narrative. Such choices could be called 'semantic choices', as they in part or even largely depend on the meaning of the options available to the player, at least for the experiencing agent. One might think of the 'game' that Bassanio is asked to play in Shakespeare's *The Merchant of Venice*. The game rules merely state that there are three caskets, that the player's task is to choose one of them, and that two of the choices result in the player loosing the game, and one in winning. The players know all of this, except for the information which of the three caskets is the winning one. All they have is a 33 % chance of winning. But what they also have is the *look* of the caskets, one being made from gold, one from silver, and one from lead, and bearing three different inscriptions. These are the game's semantics, and though they are not necessarily connected to the game's rules, they turn out to be the key to successfully play the game.

A semantic choice is therefore a choice in which at least part of the information that a player is provided with is derived from properties of the fictional world that the game creates. An example would be the choice to 'press (N) to enter the north door or (S) to enter the south door'. The existence of the choice and the reference to the game's interface (the buttons (N) and (S)) derive directly from the game design, but to name the two options 'doors' and to imagine them accordingly, is a proposition that is an arbitrary convention not necessary to the game's design, but that is added as a layer of meaning. Semantic choices therefore always relate to something beyond the game design. They are also part of the process of fictional world-building. In the example, the player makes the mental note that there is a gameworld in which doors exist in general, and two doors exist specifically.

One example of such narrative choices are all those that are character-based. As has been already discussed, some player choices are also motivated by the player's conception of the character. That is, the player bases the decision on the consideration how well it fits into the pattern of behaviour assumed to be the

right one for the character. This is done in the context of role-playing. In order to role-play, a player needs to develop a narratively relevant idea of the character. Character-based decisions are most common in CRPG, and they are mainly expressed through a choice of the character's gameplay abilities and the use of dialogue trees. With dialogue trees, the player often has a choice between different answers that have the same informational content, but use different rhetorical styles indicative of character, such as gruff or friendly. Games like *Mass Effect 2* and *Dragon Age 2* use a colour-coding system to indicate these different styles.

One of the most common gameplay elements of CRPG is that they enable the player to choose between different abilities for their player character. This is most commonly referred to as 'classes'. The choice of a specific class will determine the range of options that a player character has in a given situation, as well as sometimes the consequence of later choices. Common classes in fantasy-themed CRPG are for example the warrior, the rogue, and the wizard. Choosing the player character to be a 'rogue' might for example provide her with the ability to pick locks, an ability that the warrior does not have, or not to the same degree. When encountering a locked door later in the game, the rogue player character will therefore have a larger set of options. Choosing to be a warrior, on the other hand, will make the character stronger. When encountering an enemy later in the game, an attack by a warrior will therefore have a higher consequence than the attack of a weaker rogue. In some of the more complex games like *Dragon Age* or *Skyrim*, the gameworld will also react differently to a player character depending on the class or 'race' chosen. Non-player characters will make different comments in passing or have different dialogue options, and some quests might only be available to specific classes or races. *Dragon Age* even has six completely different beginnings with differing quests, depending on what kind of character one chooses to play before the game starts. But while classes are most often chosen before the actual start of the gameplay, CRPGs continuously provide players with additional choices about the specific abilities that they can acquire for their characters.

Character-based choices can overlap with and sometimes overrule gameplay rationality. Thus, the tactical choice for a specific weapon can be overruled by the player's idea that 'my character would never use an axe, she is more the bow-and-arrow type', even though choosing the axe might have given a real gameplay advantage. Similarly, one can choose to 'play good' or 'play evil', especially in games with a rather simple and clear-cut morality system like *InFamous*, a choice that will predetermine moral decisions throughout the game.

Since choices can only be called such when their outcomes differ in some way, that is, when the state of the gameworld changes because of at least one of the choices, they can be generally seen as situations that lead to state changes.

Thus, when in semantic choices the state is understood to (also) be the state of a fictional world, these choices can be described as (narrative) events. The player not only perceives the choice to relate to aspects of the gameworld, but to be part of the gameworld's narrative development. And since a choice situation presupposes the expectation that the different outcomes will actually differ from each other, to experience a choice in a video game as narrative is to experience that game's narrative as open. There are different indications as to when a choice is perceived by the player as being narratively relevant:

- the choice is perceived as a meaningful action that can be described with the semantics of the storyworld
- the choice is made by the player also as a choice of a diegetic agent
- the choice has consequences on the internal development of a storyworld

In order to be perceived as a narrative choice, it must be understood as a meaningful action that can be described with the semantics of the storyworld. This presupposes, first of all, that a storyworld exists, and that agents and actions can be described as part of that storyworld. This means that it is not enough to describe a choice in the terms of player interaction, for example by referring to the interface that the player interacts with, but that is not a part of the storyworld: Contrast the choices 'Press button x or y' and 'Fight the monster (by pressing x) or flee (by pressing y)'. Both choices might be identical when looking at the gameplay mechanics, but the latter is perceived as narratively relevant by referring to elements that exist exclusively in the storyworld.

As the last example already shows, a choice made in a game that is perceived as narratively relevant is double-coded in that it refers both to the storyworld (the monster) and to the player and her interaction with the rules ('press a button'). It is one of the characteristics of narrative choices in games that they have a doubled form of agency. While, in order to be a player choice, the player must be the actual agent of the choice, it is at the same time understood and experienced by the player as the choice and action of an agent that is part of the storyworld. This can be the avatar/protagonist of a game that clearly identifies the player with one diegetic agent (basically all games with navigable space such as CRPGs, first-person shooters or sandbox games). In other games like strategy games there can be a number of different diegetic agents such as military units.

Making a choice (also) as a diegetic agent is usually reflected in the restrictions that apply to the range of options that the agent (but not the player) has. These are mainly based on rules, but can be experienced as narrative. If a chess player moves a knight, she will make that move also as the knight, restricting its movements to what is allowed to this type of board piece. Unrestricted, the player would be easily able to move the piece somewhere else. Though they usually do

not ascribe any fictional specificity to it, chess players agree that their game is taking place in a world in which one agent is differentiated from the others by being called a 'knight' and by being only able to move in a specific way. These restrictions are voluntarily accepted by the chess player. In video games, they are usually non-negotiable, as they are fixed within the game mechanics, but there is much more effort put into explaining them through fictional specificity. On the other hand, the placing of such units on a strategic board before the beginning of the game (and therefore with no narrative/diegetic restrictions), or the choice of a male or female protagonist before the beginning of the game are not narrative choices in the way that the term is used here.

In order to be a narrative choice in the sense here discussed (that is, pertaining to the experience of the game's diegesis) the choice also has to have consequences on the internal development of a game's storyworld, in contrast to choices that have consequences on the external shape of the storyworld, i.e. change the storyworlds nature, such as choosing the type of landscape, or choosing whether the protagonist is male or female.

5.3 Choice, Information, and Narration in Video Games

As has been shown, information is a very important aspect of any choice. This is doubly true for video games, which create choice situations where all the available information is controlled by the game design. In a real-life game of soccer, a player's choice to run after an opponent might be influenced by the player's knowledge that she is exhausted, but her specific exhaustion is not part of the original 'game design' (a different player would have made the same moves/choices/actions with a different state of exhaustion). In a video game, the player's state of exhaustion is completely prescribed by the game system, often by not taking it into account at all – player characters can run continuously without becoming tired – but always in a clearly circumscribed way, as in the hardcore mode of *Fallout: New Vegas*.[103]

In a video game, all choice situations contain full information if one takes the game design perspective, and yet hardly a choice situation makes all of this information available to the player. Indeed, handing out and withholding information about choices is one of the most important methods of video games to make their choices interesting to the player. There are two types of information that can be given out to players, game *design* information and gameworld information. While

103 At this difficulty level, the player has to let her character eat, drink and sleep regularly in order to prevent hunger, thirst and exhaustion with potentially fatal consequences.

the first is concerned with the necessary, rule-bound function of a choice within the mechanics of the game design, the second is concerned with the optional semantic level of meaning that is ascribed to the choice and all it concerns.

The function of game design information is to tell the player how a game works, what the objectives are, and what the best way to achieve them is. Therefore, game design information is self-referential, always implying a statement like 'this is a game that is defined by the following rules'. Since games are designed systems, no game rule is necessitated by anything outside of the game, especially in games that do not rely on physicality like video games – here, everything only exists because it is part of the design. Referring to any part of the design will therefore always imply an acknowledgement of the game's status as a created object.

As we have seen, presupposing that the player's desire is to succeed at the goal set by the game, her decisions should be based on how well they support the achievement of this goal. This is what has been called gameplay rationality. In this regard, information about gameplay consequences are of vital importance, as true gameplay rationality can only work with complete gameplay information. On the other hand, complete gameplay information will render player choices either imperative or irrelevant, and make them uninteresting in both cases. Therefore, video games are careful about restricting information about concrete gameplay consequences. A game, or rather 'non-game', that playfully explores this is the flash-based *You have to burn the rope*. It is a very simple platforming game, in which the player only meets one enemy, the 'Grinning Colossus'. In order to defeat this enemy, the player has to reach one of the torches in the room and carry it to the rope holding up a huge chandelier right above the Colossus, burning it. The originality of the game lies in the fact that this is spelled out by the game itself without any ambiguity. Not only is the title already a clear rendering of the vital gameplay information, everything the player could possibly want to know is displayed as text on the gaming screen while the player is approaching the 'boss enemy'. Thus, it renders absurd all the elements traditionally thought important for this genre (skill, problem-solving, variety) and turns 'winning' this game into what is probably the shallowest victory in gaming history.[104]

Especially in earlier video games with less developed interfaces, game design information was provided mainly outside of the gameplay proper, through printed instruction manuals that were bought along with the game. These instructions, which also included information about how to install and run a game, usually never attempted to hide the fact that they were referring to a game as game. And

104 A somewhat more complex play with gameplay information and the player's free choice is attempted in *The Stanley Parable*, a modification for *Half-Life 2*.

they certainly did not provide complete information, unless they were completely built on obvious choices difficult to enforce. *Tetris* would not be spoiled by providing complete game design information, whereas a CYOA game would be seriously hurt by giving any information about its choices except for their existence.

More recent games are designed in such a way that the player can directly start playing the game without having to consult any instructions before gameplay, providing all the necessary game design information (and no more) during gameplay. As dynamic systems, video games are the only kind of abstract single-player game that can successfully withhold game design information from players. That is because video games enforce their rules themselves, and need not rely on the player to do so. No player of chess, checkers or backgammon can successfully play without having a complete knowledge about the game's rules, and therefore its design. The lack of information necessary to make choices in the game interesting comes into the game through the existence of an opponent. This is why chess cannot be played by a single player in an interesting way.

Only video games can throw a single player into a game, provide her with a choice situation, but deny any clear information about the *type* of consequence that the different options will have. It is important to make this qualification, because many games work with probabilities, that is, they do give the player information about a finite set of possible outcomes, but only a probability about which of these outcomes will be actualised. If I place my money on 'even' in a game of Roulette, I should know that the possible outcomes are 'even', 'uneven', or 'zero', and that the odds against winning are 1.111 to 1. But if I enter through a door in a video game, I might have no clue as to the very nature of the options that await me. A fire-breathing dragon? Gold? An empty room? More doors? A system crash?[105]

105 This theoretically unlimited openness has been used as another argument against applying narrative categories to video games: "But there does not need to be a story. This is why this medium is so revolutionary. It allows us to explore ideas beyond the logical constraints of cause and effect. In a space where many realities can exist simultaneously. Real-time technology is a poetic technology – a medium that allows us to explore the infinity of a moment." (Samyn *Contradiction of Linearity*) I would beg to contradict that games do not do away with causality completely, but that they rather (re)introduce the notion of contingency into the determinist model of narrative. Video games (and all FNs?) create a fundamentally paradoxical situation: at the moment of the node, the player enjoys the freedom to choose an action, rather than having that action be a consequence of previous choices, while at the same time expecting the choice to have causally related consequences. A game that really does away with causality would have to exchange it with randomness. The player would have the option to choose actions, but the consequences of these actions would be in no way related to the choice. Nobody would enjoy a game where the movement of a pawn across a board might make the board turn into a flower pot.

How do games get away with this? The answer is that they *combine* game design information with gameworld information. Because the player recognises the gameworld as a fictional world that is modelled, at least in some regards, on her own world or on other fictional worlds she has experienced, she will start to calculate probabilities by analogy to her own or other fictional worlds. 'Opening' and 'entering' something that is visually reminiscent of a door will lead the player to expect another room, and not a menu, or a big fish, or a mathematical equation. These expectations, and the probabilities they involve, are of course mere illusions. From the position of game design, there is no necessary reason why the activation of an option that is marked with 'enter door' in a game should *not* lead to a mathematical equation. The only thing that speaks against it is the consistency of the fictional world projected by the game.

Without a trust in the coherence of a game's fictional world, and the willingness to base choices on information about that world, all choice situations that do not provide complete game design information would appear as arbitrary to the player, regardless of whether they are or are not. From a FNs point of view, this vastly increases at least the *experience* of openness in a given choice situation, since it includes, besides the options actually made available by the game, all the options that the player expects as probable. Of course, the semantic and the gameplay perspective are constantly at strife, and as the game progresses, the player will often learn to narrow her expectations (that were initially mainly based on real-world analogy) by analyzing what the game actually does offer as options, and deriving possible rules and probabilities from her experience. These new probabilities are then based on inferences about the game design, and they can gradually override the more narratively derived expectations. *InFamous* and *Skyrim* are both open-world games that give the player a huge area to freely explore. Both contain buildings as part of the navigable space. *InFamous*, being set in a Manhattan-like metropolis actually consists of little more than buildings. Consequently, the player encounters innumerable doors – or rather, signs that resemble doors, because almost none of them can be opened. The buildings are to a large part only surfaces that can be explored, but not entered. In *Skyrim*, on the other hand, there is almost no door that cannot be opened in principle. The door might be locked (giving the player a chance to pick the lock) or might require a key, but in this case the key will most likely exist somewhere in the gameworld. The game thus puts a lot of effort into encouraging players to base their expectations about the gameworld on reality, where doors most of the time do indicate the possibility of entrance. Players who approach *InFamous* with the same expectation will have it frustrated rather soon, when door after door will not yield an entrance into a building. Finally, players will adjust their expectations and will disregard doors as viable player options. And they will most likely not do this by

referring to the gameworld (there is no narrative reason why the game's protagonist should not be able to open and walk through doors) but by referring to the game design ('In this game you can't enter most of the buildings'). This is why games are experienced as narratively open especially at their beginning, when the player's knowledge about the game rules (and their necessary abstraction of real-life complexity) is lowest.

But if, in making a choice that has been described here as semantic, the player interprets and evaluates aspects of the gameworld not only as functions within the game design, but as existents in a storyworld, this has a number of consequences for the way that players engage such choices, the most important concerning the reliability of the information. As in the case of the narrators of written narratives, games have for a long time taken gamemasters (the auctorial instance that gives the player a goal [usually involving gameplay actions] and that legitimises this game through narrative) as completely reliable. Just as with narrative, the default position for the gamemaster is auctorial, i.e. the gamemaster is the ultimate point of reference for the truth of and in the storyworld as well as the game mechanics. If a game tells the player that a certain button has no functionality at a specific point (often through a specific sound) or that the player character's name is Mario, there is no reason to believe these statements to be untrue, simply because the gamemaster is also seen as standing in for the creator of the game mechanics and its storyworld. This is especially important in all games that rely on combat (which is the majority of all games), since the gamemaster usually guarantees that the more often than not heavily violent actions of the player are absolutely justified in the ethical framework set up by the gamemaster. The legitimizing narrative can be minimal (in the game space *Invaders* it is arguably restricted to the very title: your enemies are invaders from space, therefore you have an obligation to shoot them in self-defense of humanity), but it is usually not questioned. More recent games like *Deus Ex* or *BioShock* have done exactly that, though.

Deus Ex made its mark on gaming history not least by complicating the relationship between player and gamemaster. The player had to learn through her engagement with the gameworld that the agent issuing commands to her was not a representative of the unambiguous and authoritative game's design and rule structure, but itself only part of the gameworld and as such unreliable. The game introduced the idea of non-player character factions with differing particular interests to a genre that had commonly relied on a very straightforward relation between game and player: the game told the player what to do, and the player did it. There is no moment of hesitation in the original *Space Invaders* about the motivation or potential legitimacy of the aliens: maybe their planet died and they need a new place to live? Maybe we were the first to shoot, otherwise they would have been friendly? Such questions do not make any sense in the context of this

game, because the game states that there are invaders and little else, and the rules leave no choice but to resort to shooting. And the same goes for early first-person shooters like *Doom*. *Deus Ex* revolutionised this through a blending of genres, combining for the first time the visual mode and structure of a first-person shooter with the organizational and narrative structure of a RPG, where player characters regularly get objectives from agents *within* the gameworld. By 'camouflaging' the early (and, as it turns out, questionable) objectives in the game as unquestionable *game directives*, this game initiated the awareness that game rules might not always be as non-negotiable as players had been led to believe.

Still, games to an overwhelming degree rely for their functioning as games on the player's unconditional trust in the gamemaster, but more and more games have started to encourage the player to be more wary of what is being presented as true and real in a game. *BioShock* is another notable example of a game that directly problematised a player's blind obedience to the game's rules rendered as a voice of authority. The player is helped through the largest part of the game in manoeuvring the game's dangerous space by a non-player character that communicates to the player character through radio. This non-player character regularly tells the player what to do next, always using the words 'would you kindly' to start a request. It is only very late in the game that the player character learns through a cut scene that his mind has been manipulated in such a way that these words inevitably trigger obeisance. He has been a puppet on a string for the non-player character, and had never been able to make his own choices. But while the mental conditioning part is only true for the fictional player character, the player is also invited to reflect on her true range of agency as a player. After all, she did fulfil all the objectives as faithfully as if she had been mind-controlled. Rich Stanton describes this moment as an epiphany about the player and her illusion of freedom:

> This cutscene is not your usual convenient expository device: it uses the convention to emphasise your mouse-clicking impotence. As you breathlessly take it all in, Atlas shouts at you to grab Ryan's key and 'would you kindly' put it in a machine. A key that looks suspiciously like the keys from Doom. A key that could be any of the other hundreds of keys you've picked up in games. In every game, be it an FPS or otherwise, you think you're in control. You think that you're doing what you want to do. But you were never in control and you never have been. You unthinkingly follow instructions, however phrased – and follow them to scripted conclusions. You're suddenly aware of the illusion of agency that games project: allowing you to interact only with what and where they say so. A game chooses. A player obeys. (Stanton)

In most cases, the relativization of game objectives, the loss of trust that commands in a game are unambiguously true, is achieved by a differentiation between

commands that are internal or external to the game's storyworld. Like the distinction between an extradiegetic and an intradiegetic narrator, game objectives can be voiced from an agent that is not part of the storyworld, but a representative of the game design, and therefore from the position that is responsible for the game's very existence. Or they can come from an agent within the storyworld. The radicalism of games like *Deus Ex* and *BioShock* is that they attempt to transgress and overcome this differentiation, and thereby force the player to question her obedience to the gamemaster's authority. But even without such almost metaleptic boundary transgressions, delegating the communication of most or even all game objectives to the internal level increases the player's obligations to evaluate those commands in ways that only work when put in relation to the storyworld. It is by now common especially for CRPGs to differentiate between internal and external commands and to make that distinction clear in the way that instructions are communicated to the player. Questlogs (which are, after all, expected to be voiced by the gamemaster) might contain sentences like 'character x asks you to help against y', or 'bring the ring of power either to faction x or y', after both factions have communicated their claim to the player earlier.

Some games have even specialised in both obliging the player to gather all information on game objectives purely from storyworld sources and at the same time creating situations in which two objectives will get in conflict with each other or are mutually exclusive. They try to create situations in which the 'right' decision (especially from a moral point of view) is undecidable, while still providing the decision with a high emotional impact. Thus, in the "Nature of the Beast" quest in *Dragon Age*, the player ultimately has to decide on which of two opposed factions (werewolves and elves) to bestow her loyalty. While the right course of actions seems clear enough at the outset of the quest (good elves versus bad werewolves), the player is gradually given more and more information that questions this, until he ends in a moral quagmire. In *Fallout 3*, the player encounters (within the vast wasteland created by a nuclear war) a secluded oasis of vegetative growth. This growth is made possible by a genetic mutation that has permanently linked a human being with a tree. The player talks to the tree/man and learns from it that it suffers badly and wishes to die. The player is asked by the tree to destroy its heart. But the oasis is also peopled with other humans, who have created a cult, worshipping the tree as a god (reading his statements so metaphorically that they completely ignore his pleas for death). Two of the villagers offer alternative requests to the player: she can either ensure that everything will remain as it is, the tree will live and the oasis remain as it is, secluded and undetected. Or she can do something to encourage the growth of the tree, making its vegetation (the only left in the wasteland) spread out beyond the oasis, but ending its quiet and secluded life.

There simply is no singly right course of action in this case, which is even reflected in the game design, since rewards and punishments for the different options are fairly balanced. One should also distinguish cases like this from the more common ones in which the player has a main objective (to reach some kind of 'winning' condition) and given a number of options with incomplete information about their outcomes (and therefore about the question which option is most conducive to achieving the main objective). This is the case of someone who reaches a fork in a multicursal labyrinth that she wants to exit. In the examples described above, on the other hand, the game withholds a clear objective on the level of gameplay information: in *Fallout 3*, the whole Oasis episode is not part of the main quest, the place is usually found more or less by chance. The player only acquires these conflicting and unreliable objectives through engaging with the storyworld, and the choice between them is only interesting as long as one takes the fictional level into account. It is not about winning the game so much as about making a choice in a storyworld, and it is the meaning of that choice that will be of the highest importance to the player. Since she acquires almost all information about her choices from within the gameworld and gameplay information is systematically withheld from her, she must engage these choices as if they were what they indeed seem to her – different ways for a story to unfold.

Besides calling into question the commands that are being communicated from the game to the player (by actually directing them to the player character), some games also produce uncertainty about their visual presentation by using the distinction between player and player character. All games that use visual presentation create something that the player sees. But those that contain recognizable and anthropomorphic avatars (player characters) also contain at least the idea of those player characters' perspective. In a game like *Space Invaders*, it is obvious that the player sees something else than the player character (the spaceship firing at the aliens). It was only through the revolutionary introduction of the first person perspective and three-dimensionally rendered navigable space that the two perspectives seemingly merged. That they are nevertheless still visually double-coded can be seen by the presence of visual gameplay information, such as information about the player character's health or quest markers in the form of flowing exclamations marks above the heads of non-player character who give out quests.

But the aligning of player and player character perspective also brought with it an implicit – though in no ways necessary – assumption that what both see is realistic in the sense that it is a faithful image of what is being represented. After all, it is vitally important that the player perspective shows things 'as they really are': if the player is to be able to shoot the alien spaceships, he needs to know exactly where they are.

Only recently have games begun to reintroduce a stronger distinction between the two perspectives, though with the difference that now it is the player character's perspective that is presented, and the (differing) player's perspective that must be implied. The most common occurrence of this is the indication of injuries that the player character receives in first-person shooters. Often in these cases, when the protagonist looses a lot of his health, this will influence visual presentation. This can be done through blood spatters in the first person vision (while some games handle this in an attempt at realism, e.g., *Modern Warfare 2*), others use it in a more stylised way, even completely unrealistically in a third person perspective (e.g., *Red Dead Redemption*). Even more abstract and reflecting on the protagonist's 'worldview' are those games where the screen becomes grey when the protagonist is hurt and in real danger (e.g., *InFamous, Prototype*). Obviously, the player doesn't see what the gameworld looks like, but what it looks like to the player character.

A step further towards the use of internal focalization is taken by a number of games that have protagonists that suffer from delusions or have visions. Occasionally – and without any indication of the fact – the game will let the player see these delusions as if they were really there. Examples include *BioShock, Singularity*, or *Dead Space 2*. In these cases, the delusions are mostly clearly marked as otherworldly through their ghost-like appearance. A more problematic and interesting case can be found in *Kane & Lynch*, where the player character is holding people hostage at gunpoint in a bank, and suddenly sees armed policemen advancing on him. The player will most likely react to this by starting to shoot at the enemies, only to realise later that the policemen were imaginary and she has killed unarmed civilians.

Another clear and interesting transgression of the separate levels of communication can be found in the game *Eternal Darkness: Sanity's Requiem*. The game uses a psychological horror theme and employs what is called a 'sanity meter'. This meter can be gradually depleted by events that are likely to disturb the player character, and when its value is low, the player character will start to hallucinate. The player (through the player character's eyes) might see enemies that are not really there, or see and hear things that are only a product of the player character's imagination. So far this is no different to the vision that the player character has in *BioShock* or *Singularity*. But the game will also start to manipulate that part of the presentational level that is external to the player character's perspective. The game will for example simulate anomalies with the game system (the Gamecube) or the TV, or manipulate the sound volume accompanied by a fake television volume indicator on the screen. The unsuspecting player might thus experience a *mise-en-abyme* when the hallucinations become hers instead of her character's.

5.4 Choice and Consequence in Video Games

Whenever players make a choice in a game, that is, decide to actualise one of at least two options they have, that choice will not only alter the current state of the game, but will alter it in a different way from choosing the other option(s). All actions have consequences, but in a nodal situation, there is more than one possible consequence. The expectation of consequence is what keeps players motivated to make choices – if nothing results from my actions, or decisions for actions, why make them in the first place? – but, as we have seen, games will withhold clear information about the consequences. Especially in those cases where they are withholding gameplay information, the player's focus turns towards a decision's storyworld significance. In order to do justice to the importance of player choices in the specific narrative experience of video games, one needs to take a further look at the way that consequence is used, presented, and experienced in them. The existence of consequence is one of the core characteristics of all games, but video games differ significantly in their use of consequence in a number of respects. Not only is the range of consequence unprecedented in any other game; as dynamic systems, they can also temporarily withhold information about consequence, and they have a special relationship to the way that players are forced to accept consequence.

It should be clear from the outset that when we talk about the consequence of choices in video games, the frame of reference is strictly limited to the gameworld. Consequence in this sense is always in-game consequence. It is one of the defining features of all games that the consequence of a player's actions for the game are independent of the consequences in the real world. Of course there are constant overlaps: running in a soccer game will make the player exhausted inside and outside the gameplay, and time spent gaming is real time spent, though not necessarily the same amount (an hour of play time might stand in for a year in the game). But the meaning of actions within the game is independent of their meaning in real life. A soccer ball might perform an actual physical movement through space, but the meaning of reaching a certain position – a goal has been scored, the ball is 'out' – is exclusively a property of the gameworld. And as soon as these gameworld meanings acquire consequence for the real world – a scored goal will earn the player real money – the game starts to lose its status as game. A fight to the death in the video game *Mortal Kombat* is a game, a real fight to the death is not, at least for the 'performers'.[106]

106 Mary-Laure Ryan uses this differentiation to counter Espen Aarseth's argument that choice brings video games closer to life than to narrative, cf. *Avatars of Story* 190–191.

Besides the necessity of distinguishing between in-game and gaming consequence, a further differentiation is needed between game state and storyworld consequence. Game state changes are those that are related to the game system as a set of rules and that have a direct influence on gameplay, while storyworld changes are those that are restricted to the game's fictional meaning, with no necessary connection between the two. While all nodal situations in FNs provide storyworld changes, static media like printed text are strongly restricted in the gameworld changes that they allow. A nodal situation in a printed text might give the player a choice, the consequence of which might be of major importance to the storyworld, but of no consequence to the *playing* of the game. Static media can employ gameworld changes only by fully incorporating all possible gameworld states independently of each other in a branching form. It is obvious that this is strongly limiting, as the script's size would increase exponentially.

The distinction between game state and storyworld changes can be used to show how different media are differently capable of using consequence. A chessboard with pieces, together with the knowledge about the chess rules, is the perfect medium for presenting all the different 'narratives' or runs that constitute the game of chess as a system. The board with the pieces placed on it provides an image that gives all relevant information about the gameworld, whereas the rules implicitly provide information about all possible changes to the gameworld at any given moment, i.e. the possible choices of the player whose turn it is. It is thus an extremely limited script with an incredible amount of possible protocols. It would theoretically be possible to present the same game in the medium of printed text, in the form of a Choose-Your-Own-Adventure book. This book would start with a verbal description of the initial game state, which can be easily done by referring to the pieces and the numbered fields on the board: '1a is white rook, 1b is white knight' and so on, including the empty fields, '3a is empty, 3b is empty'. The book would then have to list all the options available to the first player separately, indicating a page to turn to if the option is actualised: 'if you want to move the pawn on 2a to 3a, go to page 2' and so on. On these respective pages, the new game state would be described in the same way as on the first page, as would be the options for the second player. And so on and so forth, leading to a book that is about 10^{40} meters thick.

And yet, not least due to its abstract nature, chess is a rather poor system for enriching its basic 'narratives' with concrete and interesting details. Yes, there is a story about two armies attacking each other, about the proverbial pawns being sacrificed for the greater good and about kings falling, but as soon as one wants to learn more about the game's storyworld, it remains largely silent. Who are these armies and why are they fighting? What was the back story of the pawn and did he heroically agree to his sacrifice out of a sense of inner duty? Is the

king afraid as he sees his soldiers fall around him? And, considering the player's engagement with the storyworld as an ethical act, should the player confronted with a superior enemy not admit defeat early in the game to rescue the 'characters' from an unnecessary death? The ridiculousness of this question only shows the general lack of interest in the storyworld's particulars in a game of chess. But it is obvious that even the simplest CYOA-structure, or even a structure that does not present any player choice at all, such as a series of different endings, in text or film, can easily provide all of the information that the chess game can at best distantly imply.

So there are media that excel in enabling game state changes but are very limited in their narrative abilities (abstract game systems like chess) and media that excel in providing storyworld changes but are very inefficient in incorporating game state changes (books, film). Arguably, video games are a medium that combines the strengths of both, at least to a degree. This is because it combines modes of presentation from narrative media (using images and language) with a game's rule-bound system that is enforced through a dynamic structure. This is why, in video games, *both* game state and storyworld changes can be far-ranging and significant, and their significance can even be related.

All game systems can *potentially* make all game state aspects subject to changes depending on player choices, but video games are especially efficient at enabling a multitude of different types of game state changes because, as dynamic systems, they can keep track of these changes, enforce them within the gameworld, and they can present them to the player in a way that is easily accessible. The chessboard is a highly efficient way to convey the information about the game state changes that are possible in this game, namely the spatial position of the pieces. These positions are the only game state changes that the game allows, the rules that prescribe the pieces' movements or the rule how one piece can eliminate another are immutable. But what if one were to invent an additional rule, stating that one piece could only be moved every fifth or tenth turn? This would give the pieces an additional potential game state change, but one that could not be visually displayed by the game system. The players would have to remember for each piece moved *when* it had been moved, counting down the turns until it is free to being moved again. This would most likely make the game a serious cognitive challenge even for very experienced chess players. If one were to simulate the complete chess game on a computer (as the numerous computer chess games do), one could easily include the additional rule and delegate the task of keeping count to the game system, even making it display the number of restricted turns left above the individual pieces, so that players would always have this information handy.

Video games today manage hundreds of such rules automatically and efficiently, keeping track of all the changes, displaying consequence where necessary and enforcing interrelated consequences. This allows them to create games with such a complicated system of interdependent game state changes that they would be impossible to recreate within a non-dynamic medium (such as a printed text or even a board game) and even far beyond the managing capabilities of a human gamemaster. As had been said, the only type of games that comes close to video games in the number of different game state aspects that are subject to changes are pen-and-paper role-playing games (who therefore bear a close resemblance to their computerised counterparts), but these games rely on a high level of participation by the players, who are asked to enforce a large set of complicated and interrelated rules (the rule books can run to hundreds of pages) and to manually keep track of game state changes, partly creating the display of these changes themselves, for example through noting on paper the changes in the character's attributes.

It should be clear by now that, when talking directly and unambiguously about consequence, one takes the perspective of game design, of the game's structure as pre-defined in the script, and not the perspective of the player who arrives at a choice situation. The actual (range of) consequence of a choice situation has to be thought of independently from the player's awareness of consequence.

Consequence only manifests itself *after* a nodal situation has been passed through, and it is only measurable when looking at the script or performing in such a way that all possible outcomes are actualised (reversing and changing decisions, performing and remembering more than one run, or having a structure that automatically actualises *all* continuations, e.g. *Run Lola Run*). What the reader/player experiences is potentiality. This experience of potentiality is not necessarily knowledge, but is derived from the player's belief or expectation. The experience of potentiality is the expectation of a space of consequences.

The ratio of actual consequence and experienced potentiality can vary dramatically. By far the most common occurrence in video games is the attempt to merely create the illusion of agency, that is, to make the player experience more potentiality than the game actually offers, as in the 'microwave' episode of *Metal Gear Solid 4*.[107] There, the player guides the player character through a deadly tunnel filled with microwaves by continuously pressing a button. But the experienced relation between the button pressing and the relative speed of the player character's movements is only an illusion: no matter how fast or slow the player

107 Cf. Bruckheimer.

presses, the player character will always just make it through the tunnel at the very last second. In the case of event triggers, on the other hand, game design rather tries to keep the knowledge of agency away from the player. *Heavy Rain* is an interesting example in this regard, because it so seamlessly blends choice situations with high, low, or even no consequence (depending on the level one is looking at).

All choices have consequences, otherwise they just have the appearance of a choice and do not involve true agency. This holds true for video games, though obviously the choices here are merely affecting the gameworld. This they have in common with all other forms of games. But compared to other games, the way that the player is being confronted with the consequence of her actions differs, in that it is both invariable and potentially reversible. Video games can be understood as constantly negotiating between enforcing and reducing consequence. This has a lot to do with the nature of gameplay. If consequence is too rigorously enforced, games start to loose their character as *games*, if consequence is too strongly reduced, they are loosing their character as *interesting* games.

Game rules are arbitrary and all non-dynamic game systems need to rely at least partially on the players' willingness to submit to these rules and to enforce the consequence that they prescribe themselves. The game system that is a chess board and a number of pieces cannot force the player not to move a piece contrary to the rules, or not to simply take away an opposing player's pieces when she is not looking. The only exception to this is sometimes when physical properties are included within the game system and game rules and the laws of physics overlap. But a dynamic system like a video game can make *all* the consequences of a player choice non-negotiable and enforce it on the game state. Short of changing the game system itself by re-programming it, players of *Space Invaders* cannot continue to play after they have 'died', and players of a chess computer simply cannot move their pieces in any but the prescribed way.

But this is just one aspect of the relation between consequence and a video game player's acceptance of it, because the games' digital nature and the fact that they are taking place within a computer has also made them almost infinitely reversible. While almost every game can be 'reset' to its *initial* state and started anew, video games are technically capable of returning to *any* previous game state, mostly depending on their use of the savegame function.[108] This technical possibility means that player choice in video games has been often strongly

108 Some games, like *Fallout 3* or *Dragon Age*, allow players to save and return to any state in the game, others, like the *God of War* games, will allow saving only at specific locations or, like the *Call of Duty* games, will automatically save the player's progress once a predetermined checkpoint has been reached.

deprived of consequence, which might make for a more accessible and rewarding gameplay (though this is not undisputed), but lessens the impression of story-world-agency as well as the ethical importance of the choices.[109]

This is because an important point in determining the consequence of a choice is whether it is reversible or repeatable. As long as a choice can be reversed, its potentiality never truly turns into consequence: a completely reversible choice is *not yet truly made*. The only difference between a choice not yet made and a reversible choice is the amount of information on consequence. Thus, reversible choices provide the choice situation with complete information and thereby make it either irrelevant or obvious as a choice (the element of skill might still remain to keep the *action* that is chosen interesting).

The main feature of game design that makes truly irreversible choices almost impossible to implement is the savegame function. Players have come to expect this function and are easily frustrated by its absence. Still, game designers increasingly try to force players to accept the consequences of their actions. Gonzalo Frasca has an interesting theoretical proposal how 'serious' games could be designed. He calls his proposed genre "one-session game of narration", one of the main features of which is the fact that it can only be played once (no save function and no ability to play it a second time). The main effect of this would be the irreversibility of player choices, lending them much more relevance.

In video games, even should we disregard for a moment the savegame function, some player choices (most notably spatial choices) are very often reversible: when a player decides to go through the left door first, that will influence the way the game unfolds, but very often she will be able to go back through the left door to the starting point, where she can now go through the right door, without the consequences of *that* choice having been changed. Other than spatial choices, choices are rarely truly reversible within gameplay[110] (as opposed to reversibility through savegames or save points, i.e. by stepping outside of gameplay), mostly because the player character's attributes are constantly influenced by the player's actions, the gameworld can change dynamically, and the making of choices will change the cognitive state of the player. The exception are some games with time-manipulation gameplay, such as *Prince of Persia* and, most notably *Braid*. In *Braid*, the player can turn back time (and therefore fluidly 'erase' earlier game-

109 Still, one recent trend in game design is towards heightening consequence of action, or at least an awareness of consequences (see for example *Red Dead Redemption*).

110 Another type of choice that is often repeatable are the choices made in dialogue trees. If the player wants to get three different hints from a non-player character, corresponding to three dialogue options, the two options not chosen at first will often be still available after the first answer, and even the option chosen might remain available, so that the player can ask again.

play) at any point in the game and for how long she wishes, reversing as many choices as she wants and restarting from that point on.

Most games are distinguished into separate, yet connected parts that are often recognizable as distinct gameplay challenges such as combat situations or spatial obstacles to be overcome, and as narrative episodes. An important question for the force of a player choice's consequence is whether the different parts are dependent or independent with regard to game states. In some games, actions within one episode will affect the game state in the next, sometimes all states are reset to the same value independent of previous actions, thus heightening a fragmentation of the game, de-emphasizing the consequence of all the player choices that did not directly lead to the transition from one part to the next.

A classic example and a touchstone of the irreversibility of a player's choice would be the way that games handle the death of the player character in those games where the player is only using a single one.[111] Modelled on reality, a player character's death in this case means that the game has come to an end and needs to be restarted. In its strictest form, this structure can quickly lead to frustratingly repetitive gameplay, as the player will have to continuously repeat challenges she has already mastered before, because she is forced to start anew at the beginning. Video games have therefore from the start introduced mechanics that exchanged the binary system of alive-dead with a gradual system. This was done in two different ways, either by giving the player more than one 'life', or by enlarging the number of values for the player character's 'life state', so that instead of 1 (alive) and 0 (dead) he can be anything from, e.g., 10 (very healthy) to 0 (dead) with nine steps in between.

Going back to the segmentation of games into parts or levels, games with a non-binary life-state can either carry the life-value from one level to the next, or reset it. In the first case, a player that starts the first level with three lives but loses one before finishing the level will start the second one with only two, while in the second case she will again have three lives, or her health will be fully restored. This will make the play experience more fragmented and diminish consequence: knowing that lost lives will be regained, there is no reason to take too much care of them as long as the level is completed, whereas in the first case, every (wrong) decisions counts, as it influences all the rest of the gameplay. An extreme example of the second case is the game mechanic of automatically regenerating health.[112]

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111 Exceptions are most strategic video games like the very popular real-time strategy games, where the player controls numerous entities, many of which can die without the game having to stop.

112 On regenerating health see "Regenerating Health" and "Health (Gaming)" and Croshaw, *Extra Punctuation Why Regenerating Health Sucks*.

Employed by most recent military first-person shooters (such as *Modern Warfare* or *Killzone*), this means that player characters have a health value that is lowered by being attacked. When the value drops down to zero, the player character dies, but if he is not being attacked, over time the value automatically rises back to full health.[113] This means that whatever the player character does (like going through the wrong door and being ambushed), after a few seconds behind cover, his most important attribute will be the same again, a rather odd break with the realism most of these games claim when it comes to recreating the experience of being in a war.

The player character's death is surely one of the most contested areas for enforcing consequence in video games. All games that include a 'life-state' for their player character also know a value of 0 for this state, meaning that the character has died and that the game should end. But since the transfer from public arcade games to private computer or console games, even this ending is not strictly enforced anymore (since there is no profitable gain anymore in definitely ending a player's game at any point). While a main character's death would usually provide absolute narrative closure ('game over') or at least trigger a narrative that deals with the consequences of that death ('the world is now lost and the alien invaders feast on your entrails'), many recent games therefore try to evade these consequences by creating different ways of 'resurrection' outside of the savegame function. The question whether to 'resurrect' a dead player character within the gameworld – that is, to find an explanation from within the fiction for this resurrection – or to merely allow the player to return to an earlier game state (before the player character's death) is hotly debated within the gaming community.[114]

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113 Other first-person shooters like *BioShock* or *Left 4 Dead* force the player to find items (often called "health packs") in order to increase the health value after being attacked.

114 The game critic "Yahtzee" for example rather defends the existence of a narrative death followed by reloading as more appropriate than attempts at diegetic legitimization of respawning: "When we restore the game, the knowledge that we've had to step back a moment in time to correct a mistake is what's crucial to our minds, consciously or unconsciously. In terms of the many-worlds interpretation of quantum mechanics, we are stepping into a different universe where events can occur slightly differently. That death we suffered still stands back in the old timeline. In that universe, the goodies will fail, a superior officer brings tearful news of your death to your parents in what little time remains before the bad guys' doomsday weapon detonates. We, the player, opportunistically hopping into the body of our player character's quantum clone, are the only ones who remember the old timeline, but it will still exist somewhere, and that will weigh heavy on our minds for eternity. When we finally beat the game, we are playing as the one Gordon Freeman or Sam Fisher or Lara Croft that got enough lucky breaks to see things to the end, while the multiverse at large is riddled with the corpses of our failures." (Croshaw *Extra Punctuation Death in Videogames*)

In *Prince of Persia: The Sand of Time*, one of the games that opt for a diegetic explanation, the story is told by the protagonist. If the protagonist dies, the protagonist as narrator can be heard saying: "No, that's not what happened", and the player is taken back to the last save-point, implying that the player is merely performing a pre-conceived narrative. This also highlights the extent to which the game is uni-linear. A similar device is used in the *Assassin's Creed* games, where there is a doubling of avatars: the player controls a player character living in the 21st century, who, in turn, uses a technological device to 're-live' the memories (that are therefore similar to quests) of one of his ancestors. Throughout these re-enactments of the memories, the player then controls the historic player character. The fictional conceit is that the re-enactment, though offering a degree of agency to the contemporary player character (and thereby to the player) can only work when it does not stray too far from the original memory. The historic act is therefore some sort of blueprint that needs to be followed in its essentials, though not in all the details (or, in other words, not on all levels of observation). Especially problematic are failures to achieve the mission goals, and the character's death. In these cases, the memory will 'de-synchronise' and the player as well as the contemporary player character has to try again.[115]

Thus, video games have either attempted to invent fictional ways in which the player character's multiple lives can be explained, or have simply ignored the fictional incoherence that this creates by generously allowing the player to save and reload as desired. This makes the most decisive game state-changing event – the player character's death – also the one that is least acceptable to players, and the one the consequence of which is least enforced by the games' design. Few single-player games, even among CRPGs who take most pride in creating coherent worlds, exhibit death that is truly permanent, as most allow the player to load a previously saved game and continue from the stored position. Intrinsic implementations of permanent death can be seen within some roguelike games, such as *NetHack*, most of which do not allow for restoring games upon making a fatal mistake (however, save files can be retrieved by copying them before death). Another example of a single-player CRPG that has permanent death is *Wizardry 8* when playing in 'Iron Man' mode. In an Iron Man game, it is not possible for the player to save the game manually; it only saves on completion of certain quests or when exiting the game. If the player's whole party dies in an Iron Man game, the save file is permanently deleted.

115 Another interesting take on this problem can be found in *Red Dead Redemption* where the main protagonist, after the player has completed all of his missions, is killed in an unwinnable fight. As mentioned above, the player can continue the open-ended game, though, as he afterwards plays the protagonist's son.

In the first two games in the *Way of the Samurai* series, players are forced to restart the game upon death, and if the game is saved they are also forced to quit back to the menu. Subsequently re-loading the saved game promptly deletes the save straight after, thus preventing re-using saves as a means of avoiding permanent death. As the game features multiple story pathways and endings, this device is used to attach weight to the player's decisions, such as the option to yield to certain boss characters if low on health and facing possible death (and subsequently be forced to work for them and follow their story path) rather than risk being killed by them and having to start the game from scratch (but with the reward if victorious of being able to carry on down your chosen story path). The CRPG *The Witcher 2* also includes a difficulty level with permanent death: though the players can save and reload progress in case they want to pause the game (even hardcore gamers might need sleep from time to time), as soon as the player character dies in the game, all of the save files will be disabled, forcing the player to restart at the game's very beginning.

A different concept of enforcing the consequences of the player's death can be found in the *Mass Effect* series. The three parts of the series are designed both to have a continuing storyline and to allow the player to make important decisions. One of these decisions is whether to send the player character on a suicide mission at the end of the second instalment or not. The innovative feature is that the player can import information about all her previous choices after finishing one game into the next. Such an import will change the starting game state of the new game. Should the player have decided to send the player to his death in *Mass Effect 2*, her game states consequently cannot be imported into *Mass Effect 3*.[116]

Another example of an AAA game that emphasises the irreversibility of choices and character death is *Heavy Rain*. One of the most interesting aspects of *Heavy Rain* is the way it handles the consequences of player choice. A lot of effort is being put into discouraging the player from the save/reload-cycle, and instead persuading her to live with the consequences of her actions and choices. Significantly (and one of the main differences to the similar game *Fahrenheit*), there are no 'game over' situations. Though there are desirable outcomes, and though not all of these are realised by the player, the game continues all the time, even when one, or even several, of the characters die. The designer willingly sacrificed the game's replayability for this goal, going so far as to state that he wants players to play the game only once. (There is, though, the possibility to start a replay from any given scene to achieve a different outcome.)

116 Cf. Young, *Experienced point: The Death of the Death Penalty*.

Another way to force the player to accept the consequences of her action is by delaying them. If the consequences are not immediately apparent, the player cannot know whether the outcome of a choice is desirable or not, but has to continue to trust her potentially unreliable information. By the time that the consequences manifest themselves, the player will have already invested too much gameplay effort to be willing to return to the initial decision with the help of an earlier savegame, but will instead accept the consequences. Games that employ long-term effects are *Dragon Age*, the *Mass Effect* and the *Witcher* games.

The use of long-term consequence generally means that some nodal situations will not only lack in information, but also in indication. The player doesn't even know that she is making a possibly crucial decision. And since the effect of a decision is so far removed, it might not even feel like a relevant decision at all. One game that made an early and largely ironic use of this was *Chrono Trigger*. At an early stage in the game, the player explores a fairground, interacting with non-player characters such as a cat and a merchant. The player can act in different ways, but none of the actions seem to have any consequence, since they involve characters not related to the main plot, are insignificant and very much in the spirit of an open exploration of what the character can do with his environment. But at a later stage in the game, the character is arrested and put on trial. During this trial, all of the seemingly unrelated decisions earlier in the fairground will be recalled in an attempt to judge the character's moral integrity. Thus, the player is surprised by the (long-term) consequences of her choices.

6 Narrative's Contrast Agent: Moral Choices

It has been argued in this study that players of a game tend to semanticize its existents, to regard them as parts of a more or less consistent storyworld, and that video games are especially apt at encouraging such tendencies for a number of reasons. This also means that players regard their own choices – since they are concerned with elements of the storyworld and will effect changes to the storyworld's state – as narrative events once they are made, or as a feeling of narrative agency when contemplating their potentiality. This is not something that is necessary to games, and yet it is something that is overwhelmingly common. Taking into consideration what has been said about video games' ability to withhold gameplay information, it is to be expected that a player will even encounter numerous choice situations which she will not be able to engage in any meaningful way *without* resorting to the game's storyworld. One type of player choice where this becomes obvious are all choices that are understood by the player to have a moral value.[117]

All games that are not pure *paidea* contain valorisation rules. All games that are not completely abstract enrich their existents with some form of meaning, and even more so their valorisations. 'Winning' a game is first of all a completely abstract state within the gameplay that has no necessary meaning outside of it. It is *not* 'winning' in any sense of the word as it is normally used, and yet: this *is* the very term that is being used. We *do* talk about winning a game even though the point of it being a game is that this means nothing outside of itself. Applying values to game elements can never be as abstract as defining its existents, and the values will immediately begin to disseminate meaning to the existents. In the following, moral choices will be looked at closer as a special case in which the narrative perception of a gameworld interacts with the two types of rules that games provide in interesting if often problematic ways. Player choices, if they are perceived as having a moral value, cannot but be understood as choices within a fictional world, which is why they can be used as a contrast agent to test video game's abilities to give their players agency over the narratives they experience.

When considering ethically relevant actions of the player, one has first of all to distinguish between those that have an ethical value within the gameworld, and those whose ethical evaluation is based on how a player is playing a game. While the first category refers necessarily to the fictional world that the game constructs and therefore is, strictly speaking, only a moral choice of the player character, the second category takes into consideration the player as a social being whose activity of playing is embedded in a social context. The ethical eval-

117 Generally speaking, a moral choice is a choice between two or more options that are given different evaluations within an ethical framework.

uations of a single action on the in-game and the gaming level are independent of each other. For example, the player might commit an action that is ethically approved within the game (such as deciding to help someone who is in trouble), but this same decision means that she will continue playing much longer, which results in her missing an appointment with a friend. The ethical value of gaming choices becomes even more pronounced as soon as there is more than one player involved. Gaming choices and their ethics fall rather within the field of sociology, they are mostly situated outside of the game design proper, their value is applied outside of the magic circle. This analysis will be therefore strictly concerned with in-game choices and an evaluation based on in-game consequences.

Some moral decisions will actually change narrative events presented to the player. All games that feature (passive) multiple endings based on moral choices are examples of this (e.g. *BioShock, Singularity, Fallout: New Vegas, Chrono Trigger, Heavy Rain*). In *Mass Effect 2*, if the player at one point decides to rescue a certain non-player character (an action that will only have very limited gameplay consequences) this will change the dialogue options of another non-player character later on, and the player will also receive a grateful letter by the non-player character eventually. Both the dialogue and the letter do not have any influence on the gameplay, they are merely a change in narrative presentation as a consequence of an action that has an ethical value within the storyworld. *Fallout: New Vegas* ends with an epilogue in which a number of slides are shown with the non-player character factions and non-player characters that the player has encountered throughout the game and a voice-over narration describing some of the actions that have happened within the game and some events that happen as a consequence. Depending on the player's decisions, a different combination of slides is shown with further variations in the narration. There are slides for 29 different aspects of the game, some of them with up to 15 variations for each aspect, which leads to an incredibly high number of combinations.[118] The only constants in this narrative are the opening that emphasises the consequence of the player's actions on the storyworld ("And so The Courier who had cheated death in the cemetery outside Goodsprings cheated death once again, and the Mojave wasteland was forever changed.") and the closing that contradicts the player's agency by referring to a higher level of generalization, one that confounds the gameworld and the player's world: "And so the Courier's road came to an end… for now. In the new world of the Mojave Wasteland, fighting continued, blood was spilled, and many lived and died – just as they had in the Old World. Because war… war never changes."[119]

118 Cf. "*Fallout: New Vegas* endings".

119 All *Fallout* games start and end with the sentence "War never changes".

The game *Metal Gear Solid 3* has a very interesting sequence that serves to confront the player with the consequences of her (violent) behaviour. As a stealth game, the game allows the player to get through her missions with a minimum of violent or lethal confrontations, but it does not restrict her from using more aggressive means, killing enemies instead of sneaking past them or knocking them unconscious. In fact, killing enemies is often the easiest way to achieve a goal, while stealth tactics will demand a higher level of skill and tactical consideration. When the player is already well advanced in the game, and has consequently made many decisions about whether to kill or not, the player character finds himself in a nightmare. In this nightmare, he is forced to slowly wade through a river in which he will encounter all the non-player characters that the player has killed. This scene is completely dependent on the way that the player has previously chosen to play the game. As Miguel Sicart has commented, "[t]his gameplay sequence is one of the most accomplished translations of the ethical possibilities of games into actual game design." (107–108)

6.1 Valorisation Rules

In chapter 2.1.2, we have mainly concerned ourselves with the way that players semanticize the game's existents. Among these existents are all the elements that make up the game system (such as a board and its pieces, the material space of a video game and the non-player characters that populate it) as well as all of the options of the different agents and the consequences of the options. For the game's mechanics to function, none of these elements needs to have a semantic property, they *can* be described in abstract terms, though they *usually* are not. But all games that belong to the *ludus* category also contain at least one rule that defines the *valorisation* of the outcomes. This valorisation is not the same as the fact that outcomes might have different values, such as the rules that attribute different numerical values depending on where a dart hits a dartboard. It is only the valorisation that determines whether it is actually the higher, or the lower number that is 'better'. But this valorisation, necessary as it might be for games to function as games, is nowhere a rational or logical conclusion necessarily derived from the other rules, a fact that can be related to the is-ought-problem as first posed by David Hume in his *Treatise on Human Nature* in 1739:

> In every system of morality, which I have hitherto met with, I have always remarked, that the author proceeds for some time in the ordinary ways of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when all of a sudden I am surprised to find, that instead of the usual copulations of propositions, *is*, and *is not*, I

> meet with no proposition that is not connected with an *ought*, or an *ought not*. This change is imperceptible; but is however, of the last consequence. For as this *ought*, or *ought not*, expresses some new relation or affirmation, 'tis necessary that it should be observed and explained; and at the same time that a reason should be given; for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it. (469)

Taking up Hume's terminology, game rules can be said to consist first of all of is-propositions, that is, they describe what is given in a game, what is possible in a game, and what the consequences of actualizing one of the possible options are (such as the fact that moving one piece onto the same field as another piece will 'eliminate' the other piece). This is all the information that is necessary to know how a specific game *can* be played, yet it tells us nothing about how it *should* be played: why specific choices in the game should be more desirable than others, what the goal of a game is within the boundaries of the game (there might be independent goals for playing at all, such as the desire to pass time). For this, a game needs a different set of rules that are all ought-propositions: the player ought to eliminate the other player's king, the player ought to score goals, the player ought to win etc.

The rule that defines a game's *ought* (as in 'soccer players ought to score goals') must be understood as a meta-rule that is *applied* to the other rules, but is *not derived* from them in any necessary way. Quite the contrary, it is necessarily related to the semantic properties that rules can acquire. Valorisation in this sense can only be made understandable by semantic terms. While 0 and 1 are abstract mathematical values, there is no equally abstract concept that holds 1 to be 'better' than zero. The ideas of 'better', 'good', or 'bad' are inherently tied to human cognition. They are not something that is given in the world, but are part of how we make sense of the world. Their use in games must therefore be carefully differentiated from the other rules. Jesper Juul neglects to distinguish between existent rules and valorisation rules and therefore misses a chance to connect a game's rules and its fiction in a more integrated way.

> Rules and fiction compete for the player's attention. They are complementary, but not symmetrical: [...] The way in which the game objects behave also influences the fictional world that the game projects. Though rules can function independent of fiction, fiction depends on rules. [...] [R]ules are designed to be objective, obligatory, unambiguous, and generally above discussion. With fiction in games, we find the opposite to be true: a strong part of the attraction of fiction in games is that it is highly subjective, optional, ambiguous, and generally evocative and subject to discussion. Rules and fiction are attractive for opposite reasons. (121)

But though valorisation rules are indeed usually stated in unambiguous terms (exceptions are rules for judging a sport performer's style, as in acrobatics or dancing), they still cannot be thought or understood without reference to semantic concepts. They tie the abstraction of the rational game system to the players as subjective, irrational beings. In soccer, the team with more goals wins. Winning is the goal of the game. But why? Why is winning better than losing? This is considerably less easy to explain than that 1 is more than 0, 2 is more than 1 etc. Once the valorisation rule has been accepted by the player, she can theoretically forget about semantics altogether and resort to gameplay rationality in order to decide which options to take. But this act of acceptance is an irrational act (in the sense that there is no self-reliant necessary reason for it) reminiscent of what happens when one agrees to read a fiction on its own terms.

Valorisation in games is important for them to be motivating. For the motivation qua valorisation to work, it is necessary for the valorisation rule to be accepted by the player. A player who is not interested in winning at all will not be motivated to play a game of chess. Once accepted, valorisation in games is indeed usually unambiguous, and its legitimacy and applicability is not questioned within the gameworld. This is where it differs from valorisation in the real world. In real life, valorisation is the domain of normative ethics. All ethical rules are valorisation rules, with the same logical is-ought-problem applying. But what real-life valorisation rules are missing compared to in-game rules, at least for all those who do not believe in divine command and have had direct revelatory access to divine command, is the unambiguous authority of the gamemaster.

The problem with valorisation in video games is that, through semanticization, the two systems of valorisation are short-fused. Games provide players with value systems that are indisputable and absolutely justified, but present them in such a way that they are understood as elements of a fictional world that is modelled on the *a priori* world of the player's experience – in which value systems are likely to be experienced as complicated, resistant to comprehension, or downright relative. That is, the player is presented with rules that she understands to relate to her real-life concepts of ethical value, but that function with all the strictness of game rules – a functioning that can be completely independent of their representational properties. A game rule can easily classify the outcome of an action as 'good' that – in the player's understanding of the action – should be classified as 'bad'.

This is a major difference to the ethics of reading: unlike a reader, the player enters a game with an unspoken agreement to accept the rules of the game, including the valorisation rule. Otherwise, the player would not be starting to *play* the game, but rather oppose it, destroy it, or disrupt it. The reader does not enter into the same contract with the text, in relation to its ethical values. Rather,

the reader's position is that of a juror deciding on the acceptability of the ethical values proposed by the text. To get a better overview we might take a look at the differences between the ways that people engage is- and ought-propositions in factual discourse, fictional discourse, and games.

In factual discourse, all is-propositions can be accepted or contested. An is-proposition like 'London is a city in England' does not *have* to be accepted until empirical or logical proof is being given. When it comes to ought-propositions, acceptance or denial is dependent on the listener's ethical persuasion. If the person is a moral realist (ethical propositions are real and absolutely true), ought-propositions must be accepted or denied according to whether they correspond to what the person agrees is morally real. If the person is a moral relativist, all ought-propositions must be denied as to their truth value,[120] as their claim cannot be based on empirical or logical proof.

This situation changes significantly when one considers fiction: the person agreeing to enter the game of fictionality must accept all is-propositions made about the fictional world. There is no reason to contest the truth-value of the sentence 'London is a city in England', because in this fictional world, there *is* a city called London, and it *is* in England, *because it is stated thus*. But this is not true in the same way for ought-propositions. The way that readers react to ought-propositions in fiction is one of the main discursive battle grounds of ethical criticism from Gardner to Booth and Nussbaum. One important point here, and one that tends to get oversimplified in the less complex ethicist readings, is the distinction between different positions or perspectives from which ought-statements can be made. It obviously makes a difference whether a character makes such a statement or the narrator. Every statement, is or ought, that a character in a fiction makes is by default subject to the same rules that statements in factual discourse are. All characters can lie or err, they have no claim to any higher authority. But what about the narrator? Doesn't all authority reside in the narrator?

As has been said, there is no logical ground to dispute the truthfulness of any is-proposition made by *a narrative*. This could be called 'narrative authority', and it is absolute, because the narrative creates itself – and its own truth – through the act of narration. In approaching fiction, the default position is therefore that of narrative authority. The important question is: who is the agent that utters propositions as the narrative? The seemingly common-sense answer to this would be simply: the narrator. But the merest glance at a first-person narrator, should make it obvious that the narrator and the agent holding narrative authority – guaranteeing the truthfulness of the fictional world's existents – can largely

120 A moral relativist can still *adhere* to rules he does not believe can be proven to be true or 'good'.

overlap, but must not necessarily be identical. Robinson Crusoe tells us his story about being stranded on an island, but we cannot assume that he is responsible for his own existence, or for that of the island.

So a first-person narrator like Crusoe has lost most of this narrative authority, and can retain its semblance merely by the fact that he is the only narrating agent that we have at our disposal to get information about the storyworld. But narrative authority is lost not only in cases of a narrator that is clearly identifiable as a character in the narrative. This is only the extreme end of the spectrum. As a general rule, we can say that the authoritative narrator is to the extent authoritative that it (he? she?) is depersonalised. Only absolute depersonalization can guarantee the absolute reliability of the narrator's is-propositions. But personalization is not limited to a narrator acquiring a given name, or directly referring to himself as a person, or appearing as a person within the narrative. This absolute depersonalization starts to disintegrate with the first ought-proposition that the narrator makes. Every ought-proposition will contribute to the personalization of the narrator, because it will characterise the narrator as *someone who holds that opinion*, and it will consequently reduce the reliability of what is stated about the storyworld. This is not to say that the reader completely mistrusts everything a narrator states as soon as it utters a single ought-proposition. On the contrary, readers are rather easily led to perceive the 'is' and the 'ought' as indistinguishable for a good while before they start to divest the narrator's opinion from the existents of the storyworld. But with every ought-proposition uttered, the narrator becomes an agent that holds this opinion *within the storyworld* and is divested from the agent that *guarantees* that storyworld's existents (though the narrator usually remains the agent *stating* the existent, like Robinson Crusoe).[121]

Thus, in fiction, the reader's obligation to accept statements is only limited to is-propositions, since all ought-propositions are understood as being voiced from within the fiction, and therefore from a position of authority that is necessarily

121 But what about the auctorial narrator? Isn't that a type of narrator that, on the one hand, comments excessively on his (somehow we always seem to picture it as a 'he') own storyworld, yet that on the other hand strongly insists on his authoritative control over his storyworld, his own omniscience and (narrative) omnipotence? The short answer is that a narrator that excessively comments on his storyworld, yet insists on his narrative authority, is flaunting the fiction's createdness and is thereby providing a resistance to the reader's suspension of disbelief, as does all self-reflexive rhetoric. The term auctorial narrator is slightly misleading, since it contains both the narrative authority that the narrator has, and the tendency to comment on the narrative. One should also not confuse the 'narrative authority' with the implied author. The implied author is also always personalised to an extent, while the purely authoritative narrator is not. The implied author is a reader's construct of a human that would most likely write the text that the reader is reading.

less than absolute. But what about games? What differences or similarities are there? It has been stated earlier that game rules essentially work like the propositions of fiction: 'let's assume that there is a playing field of 64 squares, let's assume that this is a playing piece that is called pawn and that it can only move one square at a time', and so on. And just as in fiction, there is no reason to deny the truthfulness of these statements. It simply makes no sense to dispute the fact that a chessboard consists of 64 squares, if what you want to do is play chess. The difference comes when considering the valorisation rules. As has been said, valorisation rules define a game's objectives, define what a player should do (e.g. winning rather than loosing), and are therefore ought-propositions. And other than with fiction, to correctly play a game, a player needs to accept this game's valorisation rules, otherwise the player is just going through the motions and not actually playing. At least this is the default position in our current understanding of games. This understanding presupposes two things: that all games have clear objectives, and that objectives are clearly communicated to the player.

But, as we have seen, valorisation rules are not necessary for games. Arguably, there are forms of play that do not have any clear objectives, or that do not predefine objective at the beginning. In such *paidea* forms of play, it is the player herself who introduces valorisation, for example by introducing formal constraints, and such ought-propositions are obviously not absolute but open to be debated. Often enough, negotiating the introduction and necessity of rules into *paidea* among players is the prime educational benefit of these games.

And even if games do have clear objectives, it is one of the special abilities of video games as dynamic media to create the illusion that there are no ought-rules, by withholding the relevant gameplay information about consequences and their valorisation. Thus, games can either empower their players to create (and question) their own valorisations, or, especially in the case of video games, they can create the impression that there are no predefined valorisations and give the player at least the illusion that she can create her own values for her decisions.

6.2 Valorising Morality

Game valorisation works in the same way that ethical valorisation works: both tell an agent how he should behave in a specific situation. A player might experience a game valorisation in much the same way as an ethical norm, and they might even sound similar or be identical. 'Save the princess from harm' works well in both worlds (though princesses in need of saving are much more common in the world of games). Of course, there is no *necessary* connection between the two. But as the player increasingly experiences a game as a fiction, the two systems of val-

orisation inevitably are set in relation to each other. On the one hand, the player learns and understands what is 'good' in terms of the game (what the game objectives are, and what is conducive to its being played successfully), on the other hand the actions performed and decisions made to this purpose are increasingly understood to simulate actions that have an ethical value. One consideration can overrule the other: if the game asks the player to kill the princess instead, she might note that this command can be understood to represent an action that she would consider unethical, but prioritise winning the game and therefore do what the game wants her to do. Dead princesses ensue. This means that she is acting as a *rational* agent, adhering to gameplay rationality. Or she might prioritise the representational level of the game (i.e. its fiction) and choose to do something that might be detrimental to her being as a player, but more in accord to her being as a character in a storyworld. This means that she acts as an ethical being. The important point here is the perspective that the player takes on the game. If she chooses to save the princess *only* because she wants to win the game and this is the way to win the game, this is a rational and not an ethical decision. But if all or even only part of the motivation for the choice lie in its ethical value (the player chooses to do something because it is morally good to do this), the choice becomes ethical and thereby narrative. This is why such choices are so successful in giving the player the impression that they are narratively relevant events in a storyworld. Game designers have long since recognised this, and have worked on ways to more intricately fuse gameplay mechanics and the ethical implications of the representational level, for example by applying ethical terminology to gameplay structures.

Let's look at what is probably the most famous example, the 'Little Sisters' in *BioShock*. In *BioShock*, the player navigates her protagonist through a dystopian city built under the sea, a very hostile environment with many enemy encounters. The so-called Little Sisters are non-player characters in the game. Their gameplay function is to provide the player with an in-game currency (called ADAM) that can be used to buy improvements to the character attributes. These improvements will make it easier for the character to succeed against the numerous enemies, and therefore to proceed through the game. In the game's storyworld, the Little Sisters are genetically manipulated and mentally conditioned children that collect ADAM from corpses. Their presentation evokes a mixture of fear, disgust, and pity. Before interacting with the first of these characters, the character gets conflicting information about them from two non-player characters, a character called Atlas and one Brigid Tenenbaum. Atlas tells the protagonist that the Little Sisters have lost their humanity and are beyond redemption, and that it is his moral duty to use all of the ADAM that they provide in order to be better able to help him and his family, trapped somewhere in the city. Tenenbaum, on the other

hand, who created the Little Sisters, asks the player not to kill them but to rescue them instead (meaning that he will receive less ADAM) and promises an unspecified recompensation and reward for this. When the player then moves in on the Little Sister, the game will pause and a prompt will appear on the screen:

> CHOOSE whether to RESCUE the Little Sister or HARVEST her. If you harvest her, you get MAXIMUM ADAM to spend on plasmids, but she will NOT SURVIVE the process. If you rescue her, you get LESS ADAM, but Tennenbaum has promised to make it WORTH YOUR WHILE

The note stays rhetorically on the diegetic level. It makes gameplay consequences implicit (more ADAM will make the character stronger, which will make it easier for the player to succeed) and in-game consequences explicit ("she will NOT SURVIVE the process"). It refrains from making gameplay consequences concrete, for example by giving the exact amount of ADAM received or lost through the decision (it is 160 for harvesting and 80 for rescuing). And it is even more vague on the recompensation offered by the non-player character ("Tennenbaum has promised to make it WORTH YOUR WHILE"). At this point, it is even unclear whether this is a gameplay or an in-game consequence. As one user has found out, while there actually is a short-term advantage to killing the sisters, this is counterbalanced by the rewards provided by another character in the game for rescuing them (Kuchera). This is made even clearer in the *BioShock* Wiki.[122]

In this example, gameplay rationality and the player's perception of the game as a narrative fiction are clashing. The decision to 'HARVEST' or 'RESCUE' has, for the game mechanics, no meaning beyond the gameplay consequences (and these even turn out to be roughly equal in the long run). But for the player who is immersed in the fiction of the gameworld and who considers her decisions as doubled by an agent within that fiction, that is as part of a meaningful story, the decision takes on additional values. It is therefore only natural that in *BioShock* the moral choice whether to kill or save the 'Little Sisters' not only influences the gameplay but also which one of three endings (in the form of cut scenes) the player is shown after the final gameplay encounter.

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122 "Players receive 160 ADAM per Little Sister if they Harvest, or 80 if they Rescue. Since Tenenbaum's Gifts appear at every third rescue, Jack would have had 480 ADAM if he harvested the three (3×160), but will get 440 ADAM for rescuing them (3×80 + 200). Therefore, each Gift costs 40 ADAM, though the extras (especially the Plasmids) more than make up for it, not to mention having a clean conscience. Over the course of the game, the player only loses 280 ADAM (compared to harvesting) and, based on the price of other Plasmids/Tonics, the five awarded in Gifts are worth 2–4 times as much (depending on play style)." ("Little Sister Gift").

It can be considered as one of the triumphs of narrative fictionality within video games when they manage to create situations in which players will decide against gameplay rationality for the sake of acting in an in-game ethical (or even unethical) way. Though this feature of the game has been much lauded by critics as an attempt to give player choices seriousness and weight, Miguel Sicart sees it as falling short of creating a truly ethical choice situation:

> The problem with this mechanic is that it trivialises the moral capacities of the player to reflect on her actions by depriving the choice of any consequence to her relation with the world. If the inhabitants of Rapture reacted in varied ways to different paths taken with Little Sisters, or even if they acknowledged the difference in these choices, then there would be meaning for this action. If the game design is going to afford a decision as ethical, then it has to implement consequences, subsystems of rewards tied to the initial choices. Otherwise, players will react to the dilemmas not with a moral stance, but with their player logic, focused on achieving their goals in the game experience. (160)

Sicart seems to call for the implementation of some sort of the reputation mechanic that is discussed below. But this is merely an in-game feedback on the in-game choice. It is part of the genius of *BioShock* that it provides a choice that in (gameplay) reality has no consequence yet is presented in the fiction as a highly moral decision. The ethics implied here do not work on a reward and punishment system. As it turns out, the only reason for doing the right thing here is doing the right thing. The gameplay refuses to work as an auctorial ethical framework that guarantees the moral rightness of an action. The mode of the *homo ludens oeconomicus* does not work for the player as a moral agent. It is therefore only consistent that all real consequences of this action are purely on the fictional level, in the presentation of the three different (passive) endings. After completion, the game ends in one of three different cut scenes, depending in whether the player has killed or saved the Little Sisters. Besides the *BioShock* example, there are by now numerous instances of game mechanics that attempt to tie ethical notions to the game's rule structure. The following is a short survey.[123]

As a primarily agonistic type of game, video games from their very beginning have derived much of their motivation from a clear-cut distinction between opposing forces, only one of which the player completely identifies with. This is obviously true for all agonistic two-player games starting with *Pong* in 1972, but it is also true for the majority of single-player games as well. This, again, is due to the dynamic nature of video games that allowed them to present a real opponent to the player. Thus, the early history of video games is a history of the opposition of the player against an 'other' provided by the game system, from the famous

123 Cf. also Parker.

Space Invaders to *Donkey Kong* and Pac-Man's *Blinky, Pinky, Inky and Clyde*. The complete identification of player and player character ('You *are* Mario!') and the relentless and unchangeable opposition of the computer-provided enemies ('there was just no talking to these guys') cemented the idea that the player was always the good guy. Much early moral criticism of video games was in essence scepticism about the justification of that ascription, especially when looking at the type of acts that the hero was allowed to commit. Especially when the enemies are recognizable as human, as in most war games, doubts can be easily raised about the necessity to shoot first and never even try to ask a question.

Multiplayer games, from chess to *Monopoly*, had always known that there were two sides to a story. For the longest time, single-player video games forgot that fact while at the same time using fiction to motivate the players. Telling them to work against a piece of software that couldn't care less is much less compelling then telling them to save the earth from clearly evil space invaders. The types of fiction employed are therefore generally of the heavily Manichean type, those that tend to paint good and evil in clearly distinguishable blacks and whites.

It wasn't too long, though, until video games realised that their use of fiction also gave them access to one of fiction's most fascinating (if conflicted) abilities: besides constructing a difference between the self and the other, the ability to provide an identificatory perspective on the other. Fiction can do this because it can present the other's perspective, but games could even go one step further, by letting the player play and act as the other. For Janet Murray, "the moral impact of enacting an opposing role is a promising sign of the serious dramatic potential of the fighting game." (147) This of course only works when a clear and explicit fictional framework has been established as being connected to the game. In an abstract game with neutral designators for the two opposing factions and no other distinctions between them, the choice of faction is irrelevant. But when one creates a military shooter that is recognizably set in contemporary Afghanistan and enables the player to not only play as a soldier of the U.S. Army but alternatively as a Taliban fighter, or even if one only announces the plan to do so, a media and political outcry of indignant rage is sure to ensue.[124]

A little less controversial, some games (like *Left 4 Dead* or *Resident Evil*) contain a 'versus mode' that allows their players to choose between two sides of clearly fictitious combating factions, one of which is usually designated 'good', the other 'evil', in these cases 'normal' humans and Zombies. This is especially significant in the so-called 'survival-horror' genre. Other games *are* the versus mode of a fictional franchise. The 1994 game *Star Wars: TIE Fighter* for example

124 For information on the controversy surrounding the inclusion of a playable Taliban faction in the 2010 *Medal of Honour* game, cf. "Medal of Honor (2010 video game)", 'Controversy'.

was the first game that enabled players to play as part of the faction that had been designated as evil by the earlier *Star Wars* movies. In *Lord of the Rings – Conquest*, after playing through the normal campaign that closely follows the movie adaptation, the player can actually play an alternate scenario to help the main villain conquer the world (as he did not do in the source novels). *Dragon Age* and *Half-Life* both have a downloadable add-on that allows the player to fight as the enemies of the main game.[125]

The most common type of an explicit incorporation of ethics into video games' rule structure attaches a (numerical) ethical value to certain player character actions (usually clearly distinguishing between 'good' and 'bad') and then awarding the player character that value for the respective category, influencing what is commonly referred to as a karma meter. Instead of choosing between good and evil at the beginning of the game (as in a versus mode), the karma meter works by gradation, allowing a constant reflection on questions of ethics. Many recent games with high narrative proclivity contain karma meters. A closer look at some of the examples will show how these can be employed.

One differentiation is whether the karma value has itself in turn an effect on gameplay or not. While most cases are of the first category, an example for the latter is the game *Fable*. Here, the ethical evaluation of acts made by the game system will strongly influence the visual presentation of the player character, but apart from some inconsequential reactions by random non-player characters encountered, it will not change the gameplay in any significant way as in other games.[126] In the *Fallout* games, both negative and positive karma values (which are not displayed numerically to the player even though the system keeps a numeric count, but only through expressive descriptors) have different effects on gameplay, some to the player's advantage and some not. These effects have mainly to do with the way that non-player characters and non-player character factions react to the player character. A player character with a high 'good' karma value will be increasingly attacked by mercenaries, while someone with a high 'bad' karma will be attacked by Peacekeepers. Independent non-player characters will react helpful, fearful, or aggressive, depending on the player character's karma value. Some minor 'perks' (character attributes and special abilities that the player can choose as she progresses in the game) are only available to players with either good or evil karma.

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125 See also *Zombie Master*, a multiplayer *Half-Life 2* modification, and *Dungeon Keeper* (1997).
126 *Red Dead Redemption* turns the by now familiar concept of random non-player character behaviour as a reaction to earlier player choices around: if the player commits enough 'evil' acts to ensure his being labelled a villain by the game, the player character himself will automatically start to behave rudely towards non-player characters, insulting and threatening them.

This latter influence is a predominant feature of the *InFamous* games that also have a karma meter the player can influence through minor actions and some major decisions. An important part of the game is the acquisition of different 'powers', and many of the powers can only be chosen by either a good or a bad (according to the karma meter) protagonist. This system has been adapted by other games, for example *Dante's Inferno* (2010). *InFamous* is also an example for the inconsistency with which a karma system is applied in a game. While the many 'karma decisions' throughout the game will influence to some extent the way that the game is being played, even including the availability of certain main and side quests, the game ends with a final decision that is not only of the highest narrative consequence, but that can be made independently of the previous decisions and that completely relativises these earlier decisions.

In most cases, the karma meter actually works like a scale with good and bad at the opposite ends, and each action tilting the needle in one direction or the other. This is what one might polemically call the 'catholic' version, where good and bad actions are able to cancel each other out. Much fewer games use the 'protestant' version, in which sins and good deeds simply add up to each other on two separate meters. The *Mass Effect* games use this version in their differentiation of a Paragon and a Renegade scale, for both of which scales players can acquire points. But then the opposing values are also not conceptualised as moral absolutes (even a complete Renegade character will still be good insofar as he will still be a hero and save the world). An even more complex system was used by the game that introduced this kind of meter into gaming in the first place: in *Ultima IV* (1985), the player character had eight different virtues (honesty, compassion, valor, justice, honor, sacrifice, spirituality, and humility), and it was his objectives to practice them, increasing their relative values through respective actions such as not stealing (honesty) or fighting enemies (valor).

While the idea of a 'karma' meter is tied to an absolute and inevitable ethical evaluation (as is implied in the term's theological associations), the 'reputation mechanic' evokes a relative and avoidable judgment. Reputation mechanics in video games are a game design element that measures both the perception of the player's actions by the non-player characters and their acceptance or disapproval of these actions. Thus, it is an ethical evaluation that is not tied to the ethical framework of the gamemaster, but merely to a specific part of the storyworld. In *Assassin's Creed II*, for example, the player's notoriety can rise while directly following gameplay objectives, because the protagonist is acting in a hostile environment and is at odds with the 'public' that may perceive his actions. Also, it is only applicable when the action is being perceived, which turns it into a completely relative evaluation.

Notoriety systems are often combined with a karma meter. Such combinations can be found, for example, in *Red Dead Redemption, Fallout 3, The Elder Scrolls IV – Oblivion*, or *Fable*. Examples of games that solely have a notoriety system are *Assassin's Creed II, Grand Theft Auto IV*, and *Hitman – Blood Money. Fallout: New Vegas*[127] not only employs a complex system of non-player character factions, but measures the character's relations with these factions through reputation values for most of these factions. The reputation value measures the interactions that the character had with certain factions and the effect of these actions. Completing quests for or otherwise helping a faction will raise the character's reputation with that faction. The system records both 'good' and 'bad' deeds and accordingly applies values to either 'fame' or 'infamy'. The reputation is based on the combination of these two values. This system is further complicated by the fact that some of the reputations will influence each other. The reputations in turn have a strong influence on the game experience, as non-player characters will react differently, and whole areas might be closed off or opened to the character. Emphasizing the relative nature of the reputation mechanic is the fact that the character can put on the dress of one of the factions, which means that the faction members will wrongly recognise him as one of their own and his reputation will consequently be 'neutral' even if the real reputation is different.

An interesting form of an implied measurement of 'karma', or the relative ethical value of a player's choices is realised through the social group dynamic of the non-player characters that accompany the player in *Dragon Age*. The companions are designed to have their own personalities, together with their own ethical standards. The game features a measuring unit for the amount of trust/friendship that a companion has towards the player character, the value of which will go up or down according to whether the non-player character approves of the player character's choices or not. Some actions and decisions result in a gain or loss of trust, depending on the ethical framework of the individual character. Thus, this system resembles an individualised/compartmentalised reputation mechanic. When a very moral character disapproves of a choice, this is implicitly equivalent to a loss of karma. The main (and important) difference is, though, that this design features a number of competing ethical standards with only implied legitimacy, as opposed to the much more auctorial directly visible 'karma meter'.

The trust gained or lost through these decisions will influence both the gameplay and the story, as characters might decide to leave your party, or engage in a romantic relationship with the protagonist. Through this use of relative ethical evaluations, *Dragon Age* bypasses the main problem that all games face which

127 For details, also see "*Fallout: New Vegas* reputation".

align the game's valorisation rules with ethical evaluations: the fact that game valorisations are absolute for all players (if they want to be 'proper' players), while ethical evaluations are not, at least for most players.

6.3 Ethics and Rules

To summarise once more: gameplay valorisation works in a similar way to ethical norms, and players tend to perceive their decisions in semantic terms (and video games encourage this tendency). This will lead to choice situations in which the choice can be understood to represent a situation that has an ethical value. In such situations, there are two valorisations attached to the differing options: what is good in terms of the game and what represents a morally good or bad behaviour. There is no necessary connection between the two valorisations, and yet, some games make a connection between the two explicit. This trend in video games towards a clear connection between moral evaluation and gameplay valorisation is, as has been argued, a clear step towards an emphasis on the games' fictionality and the players' understanding of their actions as narrative events, but it is far from being unproblematic. First of all, a game's valorisation rules might stand in stark contrast to generally accepted ethical ought-propositions. An example of this is the infamous game *Carmageddon*, where killing pedestrians by running over them in one's car is necessary to win the game. The game thus posits a world in which killing innocent people is regarded as 'good', a position that the player has to accept if she wants to win the game. But this also means that there is no ethical decision *within* the game, it is rather located outside of it, in the player's decision to play or not to play.[128]

128 See also "Cruelty Is The Only Option". When it comes to the relation between a game's rules and the ethical value of the range of choices proscribed by them, an interesting aspect is the relatively new feature of achievements, sometimes also called 'trophies' or 'challenges', depending on the gaming platform. Achievements are the reward for a set of meta-goals for play that are not directly tied to the objectives of the game proper. There can be an overlap between the two – most games give their players achievements for finishing certain parts or the whole game – but they can also be unrelated, such as an achievement for walking a certain distance within the gameworld. While some achievements are tied to the game's storyline (e.g., for finishing a certain main quest), most are either unconcerned with the successful completion of the game's core storyline or geared towards a second playthrough. There are even some achievements that can only be acquired on a second playthrough as they require the player to complete the game on a level that is only unlocked after the first playthrough. This is meant to heighten the replay value of these games. One of the consequences is a reduction of the impact of the fictional world on the player's perception of the game and a heightening of its gameplay elements. As none of the achievements is explained or legitimised intradiegetically, they devalue the game's fictional

In order to correctly play a game, the player has to accept the game's valorisation rules, but when these rules are being increasingly presented in a form that is recognizably similar to real-life ethical rules, such (necessary) acts of *unquestioning* acceptance become problematic. The more a choice for an action in a game looks like an ethical choice, the less the player will be willing to blindly accept the game's valorisation.[129] Even more fundamentally, the existence of the categories of 'good' and 'bad' designate the game's ethical philosophy as that of naturalist realism. Any moral relativist would obviously have trouble accepting this premise. And on a more logical level, one could note that 'evil' as a designator is usually used to describe the moral *other*. It is therefore counter-intuitive that any person should choose an act that she herself would consider 'evil', though a second person might evaluate it as such. This describes a problematic tension between the existence of offered acts within a video game that are – because of their presentation as fiction – recognizable as having ethical value, and the game's fixing of these values. The independent game designer Ernest Adams has created a dogma for game design that is modelled on the film-makers' *Dogma 95*. One of his rules is concerned with this labelling of game elements with unambiguous ethical terms:

> There may be victory and defeat, and my side and their side, but there may not be Good and Evil. *Justification:* Good versus Evil is the most hackneyed, overused excuse imaginable for having two sides in a fight. With the exception of a small number of homicidal maniacs, no human being regards him- or herself as evil. As a Dogma designer, you are required to create a real explanation for why two sides are opposed – or to do without one entirely, as in chess.

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world and therefore also its ethical framework. As a meta-goal, they can relieve the player from her ethical responsibility, or rather, the ethical responsibility lies in the player's acceptance of the meta-goal's validity. The influence can be both towards a more or less ethically accepted behaviour: In *Metal Gear Solid 4*, there is an achievement for finishing the game without killing a single human being. In *Red Dead Redemption*, on the other hand, there is an achievement for killing the last buffalo in the Great Plains, and one for tying a person up with a lasso, dragging her onto the railway tracks, and keeping her there until she is run over by a train (for some of the comments on this achievement, cf. "Dastardly").

129 The argument runs like this: 1. Valorisation rules in a game are absolutely binding just like factual statements in fiction: if I want to play the game, I *must* accept them. 2. Valorisation rules by necessity refer only to the game's structure and have no meaning whatsoever outside of the game. 3. Valorisation rules *may* be *presented* in a way that refers to something in the actual world (e.g., when the target in a shooting gallery looks like a rabbit – or an actual person). 4. In this case, the valorisation rule starts to *resemble* a real-life ethical choice situation ('I should hit the target' seems to imply 'I should shoot at this rabbit/person'). 5. It is this resemblance to ethical choice situations (*not* to any ethical *values*) that can lead to an attitude (irrational in terms of gameplay logic) in which the player starts to question the absolute *necessity* of the valorisation rule. This does not yet say whether the player thinks that the rule is good or bad.

In order to circumvent the (absolute and impossible) duality of the categories 'good' and 'evil', some games have used cases that are aligned but not identical to these categories. Many of the decisions that the player character has to make during *InFamous* rather distinguish between 'selfish' and 'selfless' activities (such as using food supplies only for himself and his friends or giving them to the public). As mentioned above, the *Mass Effect* games do not even use the terms good and evil but instead describe acts as 'paragon' or 'renegade'. The website *TVTropes* accordingly writes: "The game lacks a traditional good/evil Karma meter, and instead gives you options on how to preceed [sic] with each encounter based on the Sliding Scale of Idealism Versus Cynicism; you are a hero either way, but your heroism can range from Knight in Shining Armor to Anti-Hero." ("Mass Effect") And even a game like *Overlord*, the very premise of which is that the player character is an evil overlord fighting against a number of heroes, introduces a karma meter that measures the character's 'corruption', thereby implying that even what is designated as evil in the beginning is not beyond redemption.

But even if the valorisation system tries to agree with ethical norms, there are numerous problems. Converting ethical to numerical values creates the illusion that they are measurable on an absolute scale and, more importantly, comparable and negotiable. An example from *Fable* might illustrate the problem of comparability: if the player character married and then killed someone, that would earn him 60 evil points, while marrying and divorcing a character would earn him 600 evil points. This shows that the game's designers and their players might have very different notions of how to evaluate different acts ethically.[130] Or one might consider this case from *Fallout 3*: In the side quest "The Nuka-Cola Challenge", the player character is asked by the non-player character Sierra Petrovita to get and sell her 30 bottles of Nuka-Cola Quantum, which are very rare in the wasteland. After accepting this request, the player character meets another non-player character, Ronald Laren, who is in love with Sierra, and asks the player character to sell the bottles to him instead, so that he can impress her. It is up to the player to decide how to act, but the game will award good karma points for selling to Sierra and bad karma points for selling to Ronald, even though the player might have chosen the second option as the *more* humane one.

130 The same is true for notoriety systems, which can also be strongly incoherent, as Jonathan McCalmont complains with regard to *Oblivion*: "Another failure of reputation mechanics can be found in the otherwise excellent Elder Scrolls IV: Oblivion (2006). In Oblivion, your relationships with factions and individuals are affected by your reputation and your actions. However, the characters in Oblivion were all entirely lacking in principle. You could murder someone's family and steal from their shop and then give them a load of cash and they would treat you as a long-lost friend. Again, real people do not behave in this way."

As these examples show, video games that create explicit ethical choice situations and tie them to game valorisation also apply a predetermined set of ethical norms. Ethical choice situations in video games are created situations, designed and enabled by the game designers who, through the shortfusing of gameplay and ethical valorisation, suggest a specific framework of normative ethics. Following the website *TVTropes*, one could distinguish some of these moral frameworks by using colour comparisons. In *Black and White* morality,[131] there is a clear, unmistakeable and unambivalent distinction between good and evil. The moral nature of a choice will therefore also be unambiguous. The knowledge of the distinction is often based rather on an unquestioned faith in the gamemaster's authority than on detailed information. Information often merely strengthens the belief. An 'evil overlord' simply is evil, and if he does something evil (thereby providing us with information about his moral value) it will hardly surprise. It is interesting to note that games that create a black and white morality very often do not allow for true moral choices. All possible actions in these cases will be morally good, while choosing the reverse is not possible. In these cases, gameplay and ethical valorisation are identical, what is good for playing the game is also morally good.

In *Grey and Grey* morality, the relative moral position of two opposing factions or interests is highly ambiguous to the point of being undecidable. There is a mixture of 'good' and 'evil' in all concerned parties and their interests. The value of the moral choices of the player, who has to decide which faction to support, will be equally undecidable. Morally grey situations are strongly based on information, with the question of the reliability and completeness of this information being very important. The player can only base her choice on the information she was able to gather and hope that it was reliable and complete. Information about morally grey situations usually comes from multiple positions within the gameworld (such as non-player characters) and not directly from a monologic gamemaster. Concerning the connection between gameplay and ethical valorisation there are two cases, 'true' and 'apparent' grey and grey. In the first case, none of the options is decidedly better in gameplay terms, the rewards and punishments are even. But gameplay and ethical valorisation might also be connected (the game might attach different karma values to the different decisions), only the player has no prior information about this. The player will therefore experience such a situation as morally grey, even though the game system shows that it prioritises one option for the game's objective.[132] The suggested *Black and Grey*

131 Cf. "Black and White Morality".

132 Walkthroughs often work to de-emphasise the impact of the game's storyworld by providing information about gameplay consequences. This can render the ethical impact of some moral choices ineffective. Some walkthroughs (especially those made by the same companies that

morality is rather a variant of this, in that moral situations are not undecidable, but there is a residue of ambiguity that suggests that the 'better' option is not completely 'good', but rather the lesser of two evils. These cases usually employ only an apparent grey and grey structure, and the 'less evil' option is rewarded in gameplay terms.

The final suggestion is *Blue and Orange* morality,which basically takes a non-cognitivist meta-ethical position. In this view, ethical sentences do not express propositions at all, and can therefore not be thought of as true or false. Especially in fictions that imagine non-human agents, attempts are sometimes made to present ethical value systems as wholly alien to human comprehension. In almost all cases, this is only applied to the non-player characters, though, and not to the player character's own ethical values. This is because, as has been shown, an ethical understanding of player choices enters the game through the use of fictional presentation, and such fiction can show the incomprehensible only as the other, and not as the self with which to identify. In the theoretical case where a player is asked to act according to an incomprehensible moral scale, she will no longer be able to 'make sense' of her choices, and they will loose their ethical connotations. If the player cannot rely on understanding the presentational level, all she is left with is gameplay valorisation.

This is not the place do decide on or evaluate the ethics of simulated acts. We have looked at moral choice situations in games because they are among the most interesting examples of a close if problematic connection between a game's rule structure and the meaning that it ascribes to this structure through its presentation. In these cases, the player makes sense of the game by understanding it as a storyworld. Only a player choice that is understood to have a moral value exploits the full potential of being experienced by the player as a narrative act, since it also implies an understanding of the player character as a moral agent, and therefore as a full character in a storyworld (as opposed to being merely a function to enable game state changes). It is up to ethics to evaluate the relative distribution of moral responsibility between the player, the player character, and the game's design.[133] For now, we can restrict ourselves to note that, in narrative terms, the experience of ethical agency can indeed be located some-

made the game) try to counter this by restricting information and using an intradiegetic mode of presentation.

133 By far the most exhaustive analysis of this question to date is Miguel Sicart's *The Ethics of Computer Games*. Sicart attempts to further an understanding of the game as designed ethical object and the player as moral agent that transcends the simplicity of most discussions of this topic. For Sicart, "The player of a computer game is a moral agent who plays according to a set of values partially created by the ethical nature of the design and the game experience, but also by the individual, communitarian, and cultural values that inform her ethical being." (146)

where on a sliding scale that reaches all the way from the player to the player character. Where it is positioned in a specific situation and for a specific choice is partly dependent on the player and partly on the game. In the extreme case, games can take away player agency completely and have the player character do something in a cut scene that the player herself 'would never have done'. On the other end of the scale, the player might make decisions based purely on her own personal wishes, disregarding the player character's perspective. This happens, for example, when players of *Grand Theft Auto* games provoke lethal crashes with their player character's car purely for the visual spectacle, and not because they understand the player character to be suicidal.

While one end of this scale loses agency, the other end loses narrative proclivity. A passive decision by the player character (one that is forced on her through the game) cannot but be presented and experienced by the player as narrative, but strips the situation of the choice element and openness that would characterise it as a node. A player decision that is exclusively based on the player's worldview, on the other hand, would presuppose that the player ignores the game's presentational level, and thereby prioritises agency over its meaning for a storyworld. The player is theoretically[134] completely free to act, but only because the act does not mean anything within a narrative. The true magic of narrative choices in video games therefore lies in between, and this is one of the areas where they excel most as FNs.

134 This case is largely theoretical since in most cases ignoring all of the presentational level is indeed impossible. The player would probably not even understand that she has a choice.

7 The Future of Storyplaying

Writing about video games is as exciting as it is dangerous. It is exciting because so much is happening so quickly in this emerging field, and it is dangerous because so much will most likely happen in the near future. As an example of FNs, video games embody the "defining features of future time, namely that it is yet undecided, open, and multiple, and that it has not yet crystallized into actuality" (Bode 1.1), but their own medial and artistic future is much more open than any story they have yet told. For a critic and analyst of video games, this means that anything he says today might have become outdated, in need of revision, or plain wrong by tomorrow.

So, if the present of storyplaying is highly unstable in the sense that any current state of the art is liable to change fundamentally at any moment, what can be said about its future? Isn't it rather overreaching to increase openness and indeterminacy even further by looking into the future, unpredictable at the best of times? Of course, what is utterly impossible is to predict the nature of something that is to come, but is not yet known. In a field that has been as ripe with innovation as video games, this is what makes 'stabilizing' the present so difficult, since it is so highly liable to turn into a yet unknown future. But what can be 'predicted', in a way, are the consequences of the things that are already known, but have not yet materialised in their entirety. We can say what is already possible but not yet actual within the given situation. And we can make (careful) postulations about trends that have already been around for a while, and are likely to continue for some time, such as the increase in computing power, or the rise of mobile and networked gaming.

Of course, it is necessary to qualify our predictive efforts by stating that this is not about what and how games will be in the near future, but only about the possible or not yet realised potential of video games as artistically successful enablers of FNs. Looking at the potential future of storyplaying therefore means looking at the medium that it predominantly uses, the video game, assessing the technology-related potential that comes with the expected advances in computing power, the artistic potential inherent in the technological affordances but not yet fully developed, and the economic conditions of the medium that will influence how these potentials are being tapped. Such speculations can only be tentative, especially if one takes into account the interplay between yet unknown technological advances, the range of artistic expressions these enable, and the economic mechanisms that encourage or hinder this potential.

7.1 Media-Economic Aspects

None of these aspects works independently. Technological advances can both increase and decrease the cost of producing content and thereby make the risk of a more artistic approach more or less viable. The introduction of new subject matters can attract a new type of audience and make these games successful, just as the changing nature and composition of the potential audience will call for different structures and topics.[135] Like architecture, the opera, or movies (and unlike, for example, text or photography), video games are for the most part a medium that necessitates large-scale human efforts and high initial investments to produce content and therefore they will always remain intricately related to its economic conditions of production.

The budget for developing major video games has risen exorbitantly within the last two decades. While in the 16-bit era (about 1989 to 1999), developing a game would cost between $ 50.000 and 300.000, at the time of the Gamecube console (1998), this figure had already risen to between $ 3 and 6 million, while current so-called AAA-games cost between $ 17 and 20 million. Some games, like *Grand Theft Auto IV*, are estimated to have cost as much as $ 100 million. These games have become major productions, comparable to Hollywood movies, with hundreds of people involved as well as company structures that are strongly averse to risk taking. Thus, while the combined creative and professional power of such teams has led games far in the perfection of existing gaming structures and their artistic presentation, there is a dearth in originality and innovation, let alone experimentation in big-budget games. The majority of major video game releases are sequels to earlier games (this is especially attractive for video games since a large amount of the production cost can be the development of a game engine that can easily be reused for a sequel) or a variation on existing structures.

135 The question of its audience is a decisive economic factor for the artistic development of video games: who buys and plays video games? The early success story of video games was as a children's toy, but sales statistics during the last couple of years have shown that the audience is not simply rejuvenating continuously, but is at least partly growing up with the games. The Entertainment Software Association provides some numbers on the current demographic state of video game players in America that clearly indicate how this audience has matured: the average game player is 37 years old and has been playing games for 12 years. The average age of the most frequent game purchaser is 41 years old. Forty-two percent of all game players are women. In fact, women over the age of 18 represent a significantly greater portion of the game-playing population (37 percent) than boys age 17 or younger (13 percent). In 2011, 29 percent of Americans over the age of 50 play video games, an increase from nine percent in 1999. It is obvious that this kind of audience will look for something different in the games they play. Cf. "Industry Facts".

And while independent publishers are there to provide the originality and courage for experimentation that the big studios are so often lacking in, they cannot be a complete substitution for them as in the case of literature, or even to the degree that independent filmmakers can be. Many large and corporately organised publishing houses are also no motors for innovation, but everyone can theoretically write a literary masterpiece with no more tools than pen and paper, and even the smallest publisher can print a work like T.S. Eliot's *The Waste Land*. Even in filmmaking, much of what is only available to large studios are the very elements that are more often than not considered to rather stand in the way of artistic greatness than to enhance it, such as spectacular set design, dazzling special effects, or even some expensive actors. Filmmakers can make a virtue of a lack of production value and produce something like *The Blair Witch Project*. In the case of video games, some genres like believable open-world games simply require a lot of money to produce, whether they are being done well or not.

Minecraft has shown, in an extremely successful way, how one can bypass this problem by strongly lowering the expectations in the game's graphical representation. In a sense, the game looks like it is twenty years old, yet its complexity, or rather, the complexity that it enables, is very much state of the art, and its basic programming was done by a single man, Markus Persson. But then *Minecraft* is missing everything that has made other, big-budgeted open-world games so high in narrative proclivity.

7.2 Media-Technological Aspects

Video games as a medium are still largely determined by the technological affordances of its delivery technology, or, to be more specific, their medial evolution is closely tied to technological advances, especially computational power, but also the technological nature of the gaming devices and the connectivity between the gaming devices. The rapid advances in computer technology are far from coming to an end, and video games constantly change in ways that are influenced by these advances. This is one thing that sets them apart from other artistic media that have long since perfected their delivery technologies to an extent where no radical change is to be expected that could alter their creative potential. The printed book has remained largely unchanged for hundreds of years and is still dominantly used as a delivery technology for written texts. At the latest with the advent of colour, movie technology also has largely remained the same for decades, though 3-D technology might still become more influential. What can definitely be said is that books, movies, the radio or even comics have been fixed in the expressive potential enabled by their delivery technology throughout the

last decades in which video games have continued to reinvent themselves. Video games from 1980, 1990, 2000, and 2010 do not only look vastly different, they are different in a vast number of aspects. And it seems like there is much more yet to come.

The major driving force behind most of these changes has been the computational power that video games could use for their game systems. This power has increased exponentially ever since the earliest arcades, and this trend promises to continue for a good while. The level of computational power is mainly responsible for the visual presentation of the games, as can be seen in the common trend for photorealism in the depiction of navigable space, but it also determines the complexity of the artificial intelligence used for the behaviour of the game system, an element that can and will further contribute to their processual and non-unilinear nature.

Ever since *Pong* (1972), video games have been predominantly a visual medium,[136] one that creates visual likenesses for players to experience. But, compared to all other visual media, the level of detail in this depiction has so far been limited purely by the medium's technological abilities to an unusual degree. Early video games were strongly restricted in what they were even able to show, completely independently of the artist's personal abilities or intentions. There simply was a limited amount of pixels available on the screen, and this amount was far from being enough to allow anything approaching realism. The improvement of graphics is therefore the most visible site of advancement in the development of video games. A mere glance at early as compared to recent games will show the observer the most dramatic differences, and an expert will be often able to tell a game's year of publication just by looking at the graphics.

The initial development has been one towards realism, adhering to a mimetic evaluation of art. Not least because, in their early phase, they had been – and were often enough derided as – such radical visual abstractions from reality, video game developers for the longest time were obsessed with making their games look as real as possible.

In terms of video games as conveyors of narrative and fictional worlds, the improved graphics have considerably contributed to players' experience of immersion and to the seriousness with which they can invest the game's story-world. Players will now encounter non-player characters that have not only a visual individuality (as opposed to the cartoonish abstractions of earlier games) but that can have faces expressive of complex emotions. In *L.A. Noire*, part of

136 Exceptions to this like the highly original game *Papa Sangre* only prove that there are still large areas of untapped creative expression within this medium.

the player's detective work is made by observing the suspects' facial reactions to questions and accusations. This would hardly have been possible with Mario.

Video games today are close to the point of achieving photorealism. It is to be expected that already the next generation of consoles will make the visual distinction between the photographically 'real' and the artificially created impossible, at least temporarily, as the level of verisimilitude of current CGI effects testifies. And yet it is doubtful whether the photorealism paradigm will lead to any more considerable artistic advances. The photorealism paradigm has led so far to the neglect of all other visual modes of presentation that the history of art has developed.

One might even go so far as to call the game industry's confusion of realism and naturalism one of the main aspects holding it back artistically, with realism understood as a mode of narrative that is honest, consistent, and serious in its storytelling, and photo-realism a merely meaning that things should *look as if they were real*. This is a common trap for visual narrative media, but one might look at the development of graphic storytelling to see that it is not necessarily a single-track dead end. A large part of comics has self-confidently embraced the fact that all of their visual presentation is created, and therefore at best a subjective kind of realism. This acceptance, while admitting that comics will never *look identical* to real life, frees them to employ an unlimited array of visual styles, styles that are in themselves expressive, artistically, symbolically, narratively. Video games and comics have always had a strong affinity, but so far, big budget productions have only appropriated very selective elements of graphic storytelling, while at the same time constantly striving for cinema's photo-realism. But recently, the independent scene is proving that the depth and seriousness of narrative content is in no way directly tied to its closeness to photo-realism, but that, in fact, abstracted or highly stylised modes of presentation can even support a narrative. Especially in the adventure and the platforming categories (e.g. *Machinarium* or *Limbo*), independent games have successfully started to embrace 'non-realist' styles of presentation as an artistic decision, and not just a technical necessity. It is to be expected that games will continue to 'look better' (in the sense of more real) as the hardware develops and programmers get ever more apt at coaxing the best results from the existing hardware, but the visual design philosophy employed to populate this realism with forms is so strongly reliant on a rather limited set of stereotypes that artistic innovation will most likely rather continue to come from non-realist modes of presentation.

The current trend towards realism and the game industry's attempt to compete with the experience of Hollywood blockbusters has turned creating an immersive, narratively rich and visually appealing game into a large-scale business venture with hundreds of participants and -million dollar budgets that can

only be handled by major studios. This has, of course, consequences for the extent to which their artistic potential is realised, and, more specifically, for the degree of openness that their narratives allow.

To look at a concrete example, the increased use of motion capture is, on the one hand, a very strong indication for the growing emphasis on narrative immersion, on the mimetic or realistic aspects of fictional world-building in games. During gameplay, and especially in combat and platforming situations, player characters still perform a lot of physical actions that a normal human would be incapable of, and the graphic rendering of which is done through computation. Motion capture scenes are used whenever there is dialogue, or when characters are expected to act and move in a realistic way, or, in other words, when the narrative mode is getting closer to that of realist fiction. But on the other hand, this strengthening of narrative immersion goes along with a severe burden on the non-unilinear capabilities of games. Motion capture sequences are by definition pre-rendered and therefore strongly fixed and less able to provide variation. And their extremely high costs of production make creating a lot of material that the player will most likely never experience very uneconomical.

As to the artistic potential, a game studio that invests a considerable amount of money in a game will be less willing to take any risks by experimenting with form or content. Looking at recent releases, the predominance of sequels (most of which change neither the rule structure nor the presentational level in any significant way) is an impressive testimony to this fact. So in a way technologically increased expressive capabilities of the medium have so far often rather hindered formal and thematic innovation. But it is to be expected that further advances in game development technology will offset this effect to a degree. Right now, making games 'look good', giving them the production values expected by consumers, costs a lot of money and is only accessible to large-scale businesses and not independent producers, let alone individual creators. But at the same time, the tools available to individual creators produce better and better results, so that the gap might close again, at least in some respects. Similar developments can be observed in music and film production, where relatively cheap tools have developed to a point where they provide the functionality of disproportionately more expensive equipment.

The games that individual developers are able to create today are often already technologically more advanced than AAA productions of earlier years. This has been supported by the trend towards the creation of game engines, in a sense construction kits for games that are relatively independent of the specific structure and form of a game. By using game engines, developers do not need to design the whole game from scratch, a process that is highly time-consuming. The creation of a new game engine is still a task that only a very large developer

can undertake, but today there are a number of game engines available for independent developers at relatively low costs, such as Microsoft XNA, a set of tools developed by Microsoft with independent game development in mind. This will increasingly allow smaller, independent developers and artists to create games that make use of more of the full technological potential of video games (such as navigable space) at lower costs and therefore with considerably more artistic freedom. An example of this would be the game *Flower*, a game that was designed by only nine people.[137]

Even more conducive to experimentation with high production values is the encouragement of some professional game developers of game modifications, or 'modding'. On the one hand, studios attempted to secure their copyrights by making their games' source codes inaccessible, but there is also another contrasting trend towards opening their game engines for modifications by the players. This trend started already with the first widely successful first-person shooter, *Doom*, that enabled its players to create completely new levels for the game, but using the existing structure of the game as well as its engine. Such mods can range from slight variations, for example in the spatial setup of levels, to the creation of completely new games. One of the most well-known mods is the oft-debated game *Counter-Strike*, which has its origin in a modification of *Half-Life*. But modification has also led to a number of highly experimental games such as *The Stanley Parable*, a very original mod also of *Half-Life*, or *Dear Esther*, a game that started as a mod in 2008 and was remade for commercial release in 2012.

Currently, the game industry is divided on whether to encourage modification or to see it as an infringement on copyright. But there are enough products that allow for modifications, sometimes making the necessary tools available for free online (as was the case with the last three *Elder Scrolls* games). And while modding games like *Doom*, *Half-Life* or *Left 4 Dead* requires a certain level of knowledge as well as time and determination, more recent games have even further simplified the process of modification and included it as an integral part of the (networked) gaming experience. The platforming game *Little Big Planet* has derived a considerable part of its success through its level creator and the easy way through which these creations can be shared by other players. *InFamous 2* has attempted the same for open-world games by allowing players to easily create missions that will then automatically appear within the material space of other players who play online. This second example is especially important for its narrative potential: the players can create narrative situations and include (written) dialogue.

137 Cf. Carless.

Further increases in computational power will also allow the creation of improved or more complex artificial intelligence for non-player characters. As has been argued earlier, the dynamic behaviour of non-player characters is an important factor contributing to the non-unilinearity of a game's narrative experience. A character's behaviour can be scripted with multiple options and variables, but like all non-unilinear scripting this has its limits. But behaviour that is generated adaptively by artificial intelligence can take a multitude of directions and influence the game's narrative in emergent ways. Whether artificial intelligence will ever enable non-player characters to create anything approaching the range of human interaction (and not just be better at outflanking enemies), or even "surprise [players] in a convincing way", as E.M. Forster demanded of round characters, is speculation of the less likely sort. But some further improvement in this area is surely to be expected. And, as some recent examples have shown, artificial intelligence, or rather: procedural generation is not only relevant for the behaviour of single non-player characters, but for that of the whole gameworld as well. *Left 4 Dead* and *Skyrim* are two recent examples of games that allow dynamic changes to the gameworld, which means that aspects of the game that are otherwise subject to scripting can be increasingly emergent and therefore non-unilinear.

The storage devices used by video games have been largely responsible for the size of the gameworlds that can be created for a single game. As with computational power, storage has developed exponentially, from the 170 kilobytes that could be stored on Commodore's first floppy disk for the C 64 to the 25 gigabyte, or 25.000.000 kilobyte, that current-generation consoles use. This has led to the creation of gameworlds that not only have a very large but also incredibly detailed navigable space, from the roughly 3 mi^2 of the 2001 *Grand Theft Auto III* (one of the first 3-dimensional sandbox games) to the 400 mi^2 of *Just Cause 2* (2010).[138]

It is doubtful whether mere size will do much more for improving the artistic value of games, especially when it comes to physical size. Of a higher narrative importance is the density of the presented world. In the recent development of navigable space in video games, size and density have not always gone hand in hand. *Morrowind* was largely hailed for the size of its open world, yet when compared to some more recent titles, this world feels largely depopulated, empty, at times even dead. Today, the emphasis of narrative games is therefore much more on the number of elements within a world that can be interacted with and that are meaningful, and the dynamic behaviour of the world.

138 For a comparison chart, cf. "Large Video Game Worlds".

7.3 Artistic Potential of the Medium

Since video games as a (meta)-medium are still far from reaching an end to their technological development, the range of what is technically possible still largely influences the range of its artistic potential, and yet one also has to think the two independently. True, a computer system that only allows for the presentation of black and white on a screen can never employ colour in any artistic way, but the systems have long since reached a point where what is possible by far exceeds what is currently realised.

One field where considerable advances have been made also by major developers, but where the potential for growths is yet enormous, is in the range of themes and topics that can be addressed through video game narratives. Video games started out as children's toys, and the themes that they addressed and the stories they told were accordingly. In the best cases, they had something of the archetypal simplicity of myth and fairytales, but often enough, subject matters were merely silly, juvenile, or nonsensical. Quite naturally, video games in part have aged with their players, since not all of them stopped playing when they matured beyond the interest in toys. This has led to somewhat more complex narratives as well as a broadening of topics, though still far from any real maturity. The most recent step in this development has seen, from major publishers, ever more complex stories with contents clearly addressed at an adult audience, and, from independent and smaller publishers, the emergence of 'serious games' and games that address topics that had been rather uncommon. *Heavy Rain* and *Alan Wake* are games whose stories hold up at least against standard movie thrillers, and they present characters that are recognizably human and that express a fairly broad range of human emotions. They address topics of loss and responsibility, of dream and reality, and of personal guilt. Yet it is hardly difficult to imagine the existence of even more humanely involved or 'grown-up' topics and more interesting characters – though one might question whether such games will find a big enough market and actually get made.

When talking about the artistic potential of video games, one can divest the topics they address only to a certain point from the game structures through which these topics are being enacted. This is where the innovative potential lies. As long as one looks exclusively at content, the demands directed at games are usually restricted to not falling too far behind what has already been explored as topics by other artistic media. On the other hand, even a game that is concerned with an investigation into Ayn Rand's philosophy of objectivism like *BioShock* can and must be asked whether the amount of repetitive killing actions that the game forces on its players is completely concurrent with its apparent theme.

Like other art forms, game development as an expression of human creativity brings forth its own structures, some of them seemingly unalterable necessities,

others more clearly conventional. That so much of the merely conventional seems to be written in stone and repeated invariably with every new game is most likely due to video games' conditions of production. The history of art has not least been a history of breaking with conventions, of testing the boundaries of genres and even media until their breaking point. There probably has never been an art form that has had such a short cycle of establishing and then breaking genre conventions as video games, and yet there is still a lot of work to be done.

Video games started out as something very simple (vide *Pong*), but from the beginning they carried the promise of great complexity. This is a promise that has actually been fulfilled to a staggering degree. Simulation games, whether they simulate the behaviour of an airplane, a city, or the physical properties of a landscape (*From Dust*), can be deep to the point where they actually put off players who are not willing to get acquainted with their complexity. And story-driven open-world games like *Skyrim* contain such a wealth of content, and combine it in such complex ways, that players can get lost for endless hours in gameworlds that seem real and inexhaustible. Of course, complexity is neither a guarantee for a good game, nor is it a prerequisite for a game that has artistic potential. But complexity enables a whole range of artistic expressions that cannot be put in more simple terms. Some artistic pieces might just need the large canvas. It is fair to say that the canvas is already large enough to allow for very complex structures, but that all structural possibilities on this canvas are far from having been exhausted so far. In terms of complexity, the creativity of game designers is hardly limited anymore by technology.

Rather, many of the limitations are self-imposed. Today, the genre that matches most closely video games' narrative structure is pornography: a thin narrative frame leading quickly to a repetitive series of events that should carry a high relevance but that is increasingly devalued by the repetition and that takes up a disproportionate amount of the reception time. The only difference is that where porn has sexual intercourse between a number of actors, video games usually have combat situations and endless killings.

This is not to say that video games must not be about violence and even killing. But in order for such an act to become narratively relevant (instead of merely sensorially stimulating), it needs to be singled out and put in relation to something else rather than become automatised by meaningless repetition. Players of most shooters will very soon cease to reflect on the meaning of what they are doing when they are killing enemies, but only the most detached players will not feel the immense relevance of the one situation in *Heavy Rain* where they *may* kill a man – or let him live.

Heavy Rain surely is an extreme example and a game that does not consider itself combat-oriented at all, but even those games where skill-based shooting is

central would profit from a little restraint in repetitiveness, rather building up less but more relevant and believable enemies. This will happen probably more and more as improved AI makes it possible to create enemies that are a challenge because of their behaviour (which is then interpreted by the player narratively as part of their character) and not merely their numerical attack or defence strength.

Generally speaking, stripping a game of repetitive actions to make all or at least more acts meaningful within it will greatly heighten the player's narrative immersion and therefore improve the potential impact that player decisions can have and the depth of engagement that a game can have with certain types of human behaviour. No other narrative medium can make readers/players feel what it means to actually commit an act (or not) in the way that video games can, but they are far from having developed the full potential of this ability. There is a limit to what we can learn about love, sensuality, and the erotic from mindless and mechanical pornography.

Probably the biggest stepping-stone of the medium on its way to artistic maturity is the willingness to let go of the concept of the game deciding on a winning or losing state, and especially of an absolute valorisation of the winning state.[139] There already are successful examples of 'unwinnable' games, but they are usually very short. A good example is *September 12*th. Here, the player is lead to believe by the game's presentation that she is to try and hit terrorists who are moving through an Arab village with missiles. But as the missiles also kill innocent bystanders, what happens is that non-player characters come to mourn the dead, and then turn into 'terrorists' themselves. Thus, the more the player fights the terrorists, the more of them she creates, and finally she has to realise that there is no achievable winning state and that the best way to have played this game would have been *not* to play it. This has led some scholars like Marie-Laure Ryan to conclude that *September 12*th might be a clever political cartoon, but not a game. Instead I would like to propose the term 'anti-game' in a similar sense that there are anti-novels: it is a game system that denies some of the fundamentally accepted foundations of games, that radically questions its own generic structure. But only such self-questioning can bring an art form to complete maturity. Almost all other artistic genres have developed their own deconstructions, some, like the novel, have even started that way. As long as an art form still deems certain of its generic rules as inviolable – such as 'tragedies can only be concerned with royalty', or 'a game must be fun to play, and it is only fun if you can win' – it can produce great examples, but as a form cannot be said to have developed its full potential yet. One can only know how far an art form is able to go when seeing

139 This is not quite the same as having a *paidea*-like game without objectives, or at least without clear-cut objectives like *The Sims*.

where it 'goes too far', transgressing its own boundaries, denying its own foundations, and potentially becoming something else. The Belgian artists and video game designers Auriea Harvey and Michaël Samyn have used the term 'notgames' to describe an approach to gaming that transcends perceived necessities, especially the idea of winning or losing:

> The notgames thought is inspired by videogames. By those fine moments in virtual experiences when we feel like we're in another world, when we believe a synthetic character is our friend, when our bodies merge with the system and the software becomes our hands and eyes, when we find ourselves enthralled by the very thing that we are doing at that moment in complete disregard of the prize that we might be winning or losing. (*Not a manifesto*)

Harvey and Samyn are at the forefront of those designers who are willing to transgress boundaries and established conventions, for example in their 2009 game *The Path*, an adaptation of the Little Red Riding Hood fairy tale, where the player is told by the game to stay on the path, though this will mean that she actually misses the game.

The literary equivalent to video games' insistence on 'winnable' games would be the expectation not only that each fictional text should provide complete and satisfying closure, but that the degree of closure is proportional to the effort that is required to read a book. In this case, a book like *Ulysses* or *Gravity's Rainbow* would have to count as a complete artistic failure. Such an attitude is good for marketing and sales departments and will push games into achieving perfection in one regard (being as much 'fun' as they can possibly be), but is actually detrimental to their development in another – namely as a reflection of everything else in life which is not pure unadulterated and unambiguous fun, which is actually quite a lot. What is tentatively developing but is still very much lacking is an attitude that is willing to accept the fact that one puts effort into a game for the mere sake of playing it instead of winning or completing it. It is no coincidence that the idea of a non-pragmatic perception is one of the major attempts to define art or literature with a capital L.

It is one of the major appeals of games that they so often have objectives, just as it is one of the appeals of fiction that it can teach us something, mean something. And yet, some of the greatest examples of fiction derive from a frustration of this meaning-generating potential. In the same sense, one might think of games (unthinkable as they seem to be in the current climate) that make us want to achieve something, but then force us to accept that this something is not achievable, or is not as desirous as was first expected. Winnable games can indeed express potent ideas, but some ideas (and they are not the least interesting) can only be addressed by unwinnable games.

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