NARRATIVE IN VIDEO GAMES

ENVIRONMENTAL STORYTELLING IN BIOSHOCK AND GONE HOME

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Introduction

The video game industry is bigger than ever. In the last few decades, it seems like it has effortlessly surpassed the music and film industry in terms of overall revenue. In all likelihood, this trend will only continue in the near future. It would make sense to attribute this fact to the technological innovations of the late twentieth and early twenty-first century, as there is no denying that mass-production has made computers, consoles and games considerably more affordable and accessible over the years. However, there are additional arguments. The number of possible uses for the medium itself has also drastically increased. No longer are video games something that only a select group of people can enjoy, an idea that is wonderfully articulated by video game theorist Jesper Juul in his book *A Casual Revolution* (2010). Some platforms have even taken on a model similar to that of the extremely popular video streaming service Netflix, where—by paying a small monthly subscription fee—games are streamed instead of bought physically or digitally. These days, many video games also actively stimulate a sense of connectedness and—more often than not online—togetherness. With the enormous variety in audiovisual styles, thematic contents, gameplay\(^1\) mechanics and characteristics, the video game industry leaves no stone unturned to appeal to the most prodigious audience possible.

Thus, video games have become an essential part of many lives, and this for several reasons other than mere pleasure. Some of the uses for video games include therapy, (military) training and simulation, revalidation, and even vaccination. The use of games or game design elements in contexts other than gaming is often referred to as *gamification* (Deterding et al., 2011). Perhaps one of the most valuable uses is situated within education. Used as a facilitatory learning aid for children, video games can help improve various social, language, math and reading skills. Studies have demonstrated that the use of the medium can improve learning (Dondlinger, 2007) and scholars have acknowledged the existence of mental health benefits of video games (Granic et al., 2014), while still warning for possible overinterpretations of data. In a study on the potential benefits of the use of video games in education, chartered psychologist Mark Griffiths mentions increased self-esteem, hand-eye coordination and reaction times as some of the possible advantages. Furthermore, video games also prove to be remarkably useful for the development of skills among special need groups.

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\(^1\) Defined by Salen and Zimmerman as: “the formalized interaction that occurs when players follow the rules of a game and experience its system through play” (303).
Hence, it has become challenging, if not impossible to avoid video games on a day-to-day basis, so much that it would be hard—these days perhaps even more for anyone aged twenty-five or younger—to imagine a life without them. Also consider the abundance of products marketed towards gamers, the rise of e-sports and its corresponding tournaments, broadcasted live to millions on platforms such as Twitch and YouTube Gaming. Additionally, there are thousands of mobile games made for smartphones, with more being put online every day. Even some social networks offer their users a variety of games that can be played within the web browser, integrating the game within the network and blurring the lines between social media and video game. Traditional board games and sports simply end up being converted into digitalized versions of the same game, for example the NHL and FIFA (Electronic Arts) franchises, but also card games such as solitaire or poker have their digital counterparts.

This extreme diversity, along with the uniqueness of a medium of this category, can complicate the codification of its principles, especially when one considers the rapid developments in the industry. As the means for video game design have evolved and improved—along with the computing hardware to support its innovations—, video games have become graphically more monumental and can sometimes be dazzlingly complex. However, the industry’s seemingly natural drive for innovation is not exclusively confined to the enhancement of the audiovisual. There have been new input methods—most noticeably motion capture, pioneered commercially on the global market by Nintendo’s Wii console—that have literally changed the game. The integration of more taxing physical interaction in games—mashing the buttons of a controller can hardly be called tiring—seems to have become the most recent trend in the industry. Currently, the rise of virtual reality marks the latest innovation to completely overhaul the gaming experience as we know it. Another example is Pokémon Go (Niantic), mobilizing thousands of people all over the world in the summer of 2016.

Video games have become inevitable and indispensable, yet they are unlike any other form of traditional media that we know. Evidently, many questions emerge from these observations. Because this new type of media has become so prevalent in a relatively little amount of time, some of these questions seem to have remained at least partially unanswered. So how does one approach this “new” medium? What can be said about the medium itself? What makes a game a game and how does it differ from traditional media? Not only the qualities of the medium have been up for debate, in fact, a large part of the discussion has focused on the correct method of analysis of video games. What are adequate criteria to discuss the medium? Is there an appropriate way to analyse its functions and attributes, and if so, how? Similarly to literature, film and drama, the idea that also video games possess narrativity to some degree is generally accepted among
academics. More problematic is the role of narrative in video games, as well as the relationship between the game dynamics and the narrative elements of the game. How do these affect one another? What is the nature of this interaction?

This essay will attempt to dig deeper into the matter, focusing on the concept of environmental storytelling. It will present the case studies of two games. Firstly, the commercially successful—even deemed to be a work of art by some—video game *BioShock*. To make for a more interesting analysis, a second game will be analysed. This essay will comparatively analyse *Gone Home*, which, at the same time, allows for a better illustration of the dissimilarities of two cases that are essentially considered to be the same thing: video games. I will argue that the video games *BioShock* and *Gone Home* possess a form narrativity in which game elements and narrative elements are closely intertwined, particular to the video game medium. More specifically, this is to be understood as environmental storytelling, the game’s environment—in the widest sense of the word—which aids in the construction of specific types of narrative in these video games and has various other uses within video games that I will try to illustrate in my analysis of these games.

This essay is organized as follows. The first chapter will sketch the pre-history and recent developments of video game studies in order to provide a sufficient base for the further parts of the research. The second chapter will briefly blueprint the games chosen as case studies, after which a third chapter will sketch and discuss the theoretical framework to be used for the narrative analysis of these games. It will include a discussion of some general notions of narrative in video games, including the relation and interaction of game and narrative, or in other words, ludic and narrative elements. A fourth chapter will provide a detailed discussion of environmental storytelling. Finally, the last chapter will bring forth a comparative analysis of *BioShock* with *Gone Home*, in order to investigate to what extent these techniques are employed and how they differ in different (types of) video games.
Short Overview of Video Game Studies

In order to successfully analyse video games such as *BioShock* and *Gone Home*, or any other game for that matter—whether that be a traditional (board) game or a video game—it is necessary to establish a framework for analysis. What follows below is a brief overview of what I consider to be some of the most relevant and important voices in the evolution of the field. As video game studies and the study of narrative within games have advanced significantly in the last two decades, an outline of the recent developments seems in place. This is by no means an exhaustive overview, but is meant to contextualize the further parts of this essay.

Early Game Studies (and Their Echoes in Contemporary Video Game Studies)

It is hard to pinpoint the exact starting point for the study of video games, and while games as a cultural and social phenomenon had been studied long before, the interest in the study of video games only arose along with the emerging success of the medium itself in the last two decades of the twentieth century. Juul emphasizes how quickly everything has taken off:

>This brief history has been something of a gold rush and a race toward being the first to point out special aspects of games, to format the field, to define words and to point to similarities and dissimilarities between games and other cultural forms* (A Casual Revolution 11).

This theoretical blitz for renown may explain why video game studies today are characterized by such an abundance of voices originating from many different fields of study, further increasing the climate of conceptual turmoil.

As Juul points out in *Half-Real*, the “two classic texts of game studies are Johan Huizinga’s *Homo Ludens* (1950) and Roger Caillois’s *Man, Play and Games* (1961)” (10). While both of these works have had a momentous impact, they focus mostly on the notion of play in a sociocultural context and appear to neglect games in their own right. Juul confirms this thought in his discussion of Huizinga’s legacy, stating Huizinga “focuses on play as a central component of all culture”, but “provides only sketchy discussions about games as such” (10). On the other hand, Huizinga’s concept of the magic circle has greatly influenced video games studies. Nieuwdorp notes the concept was re-introduced and applied to video game studies by Katie Salen and Eric Zimmerman, two voices that are not unimportant in contemporary video game studies (6). While it has been purposefully applied and re-applied, it is not exempt from criticism (Pargmann and Jakobsson, 2006). Caillois is mostly remembered for his fourfold categorization of games (*agon, alea, mimicry and ilinx,*
along with a variable that applies to all types of games, the continuum between *ludus* and *paidia*. For a more in-depth discussion of Huizinga and Caillois’ theories, I refer to Salen and Zimmerman’s anthology. Concluding, the fact that these texts were written in a period where video games did not even exist yet—and thus were produced by scholars operating a radically different frame of reference—does not impede them from still being relevant to contemporary video game theorists.

**Espen Aarseth: Cybertext and Ergodic Literature**

A notably important figure for the study of video games is Espen Aarseth. In his work *Cybertext: Perspectives on Ergodic Literature* (1997), the Norwegian academic introduced the world to ergodic literature and the concept of cybertext, two notions that would significantly shape electronic text studies and video game studies. It is important to notice that Aarseth’s work initially did not necessarily concern video games, but as the title suggests, a specific type of texts. Nonetheless, Aarseth is often considered to be one of the founding fathers of video game studies. Klevjer describes Aarseth’s concept of the ergodic as “the principle of having to work with the materiality of the text, of having to participate in the construction of its material structure” (44). Aarseth himself underlines the fact that some texts—cybertexts are only one possible type of ergodic literature—cannot be dealt with by traditional literary theory, as they are inherently different. Aarseth clarifies that “in ergodic literature, nontrivial effort is required to allow the reader to traverse the text” (*Cybertext* 1). 2 Cybertexts are most easily described as “a configurable and playable text”, Klevjer states (44). Aarseth also differentiates textonic and scriptonic game elements in his typology of cybertexts. In other words, Aarseth distinguishes signs as they exist in a game from the in-game signs as they are presented to the player. It can be rather difficult to grasp what Aarseth actually means with some of these terms, as the discourse is rather vague at times, but the essence to be remembered in all of this is that Aarseth’s work can be seen as and used to justify the establishment of a new discipline. Traditional literary theory is insufficiently adept to analyse nonlinear types of texts, such as cybertexts and other types of ergodic literature. Additionally, along with Markku Eskelinen, he warns against the “colonialization” of the study of video games by literature, cinema, drama and theatre studies.

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2 It should be noted that Aarseth’s theory is simplified here. Aarseth’s conception of cybertext regards texts more as (textual) machines, that must be operated by the reader to generate various narrative outcomes. This variety and nonlinearity explains why the classic literary paradigm comes short.
Ludology versus Narrativism

Unsurprisingly, but maybe regrettably, Aarseth’s observations about cybertexts and ergodic literature have led to what has been the subject of many articles concerning video game analyses: the divide between the so-called ludologists and narrativists. An anti-narrative strand had already germinated out of the ergodic—also referred to as “the ludic turn”—but soon the discord between scholars escalated further. This happened mainly after Gonzalo Frasca introduced the term ludology in an article in 1999: “We will propose the term ludology—from “ludus”, the Latin word for game—to refer to the yet non-existent ‘discipline that studies game and play activities”. Although Frasca claimed that nor he, nor Aarseth had coined the term, it still caused a fiery debate within the academic community. Ludologists would completely discard narrative analyses—essentially denying the existence of a connection between narrative and game—and focus on a formal analysis of the game and its mechanics. Contrarily, Frasca describes narrativists as scholars who hold the opinion that “games are closely connected to narrative and/or that they should be analysed—at least in part—through narratology” (“Ludologists Love Stories Too” 93).

Towards a Middle-Ground Position

In 2003, Frasca stated—from a ludologist’s point of view—that the “narrative paradigm still prevails” (“Simulation versus Narrative” 223). But after more than a decade, the tide seems to have turned. The generally accepted way to analyse games has moved on from a “colonization” to something ludologists find easier to digest. Partially responsible for this was Frasca’s response to the debate that erupted after he adopted the term in 1999. In his response, Frasca debunks misconceptions about the debate—underlining there never really was a debate at all, and that the disputes between the two groups were really the result of misunderstandings—and that may as well have instigated one of the major mentality changes in the discipline so far. Frasca’s arguments show that even Aarseth confirms the presence of an overlap between narrative and game, as well as others who were first considered to be old-line ludologists, such as Jesper Juul and Markku Eskelinen.

With narrative slowly having been deprived of its negative connotations, this relatively new middle-ground position that combines both ludic and narratological elements seems to be the path for the future. Even though Frasca had already argued in favour of a “peaceful coexistence” with narratology, there are others who bring forth ways of analysing video games. In 2006, Marie-Laure Ryan proposed a “functional ludonarrativism” in Avatars of Story. According to Ryan, there is a duality to video games, which is what makes the medium so unique. In Ryan’s words, video games are the combination of an “imaginative experience of
a fictional world” with a “strategic dimension of gameplay” (203). Ryan refutes ludological arguments that only emphasize the uniqueness of the video game medium, and criticizes the ludologists for cold-shouldering narratology. Ryan calls for a specialized approach that integrates both narratological and ludic elements of video games. Other authorities that can be situated within this middle ground position are Henry Jenkins and Mateas. Jenkins wrote an influential piece on the narratological consequences of the organization and design of game spaces. Jenkins’ claim that “a discussion of narrative potentials” does not necessarily have to “imply a privileging of storytelling over all the other things games can do” (120) signals his readiness to reconcile game with narrative. Paradoxically enough, the future of video game studies looks to be fairly homogenous and heterogenous at the same time. While the field has generally accepted a selection of texts as canon, it remains as interdisciplinary as ever, drawing from psychology, narratology, anthropology, literary and media studies, computer science and more. In a similar way, this essay will not try to slavishly be in accordance with one side or the other. One thing is certain, however, video games will become an even more embedded element in our sociocultural environment. Thus, it is plausible that the importance of video game studies in the next few years will grow only exponentially, too.
BioShock and Gone Home

For the sake of keeping this essay structured and to prevent a lengthy summation, I will not be recounting every single event that would take place during a playthrough of the games selected for this work. Instead, I will briefly draft the most important events and themes of the games below, so that the reader who has not played the game may at least become somewhat familiar with the respective plots of the game. Both games were played at least twice on PC (Windows 10). BioShock was completed on PC and was later partially played through again on Playstation 3. Although there is practically no difference between the remastered and the original version of BioShock, this essay only concerns the original game and not the remastered version of BioShock. I am aware of the existence of the Challenge Rooms DLC package for BioShock, but did not consider it for analysis in this work.

BioShock: General Notions and Plot Synopsis

The year is 2007 when game developer 2K Boston/2K Australia (formerly known as Irrational Games) releases its new game, BioShock, upon the world. Originally released in August 2007 for Microsoft Windows and Xbox 360, the game was subsequently ported to other platforms, most importantly to Playstation 3 and OS X. In September 2016, 2K Games published a remastered version of the game, which also included a remastered version of its successor, BioShock 2. Almost a decade after the release of the original game, this version was altered slightly to ensure compatibility with Playstation 4 and Xbox One, along with support for higher resolutions and allowing for better framerates. Described on the official BioShock website as “the genetically enhanced first-person shooter that lets you do things never before possible in the genre”, BioShock invites the player to work his way through a hostile, utopian turned dystopia. The player descends into an underwater city to defeat mutated creatures and security robots from a first-person perspective, using a variety of weapons and abilities along the way.

BioShock is a first-person shooter set in the 1960s. The player starts the game as Jack as a young man on an airplane. Almost immediately after starting the game, the plane crashes in the middle of the Atlantic Ocean. Miraculously, Jack survives the plane crash, and Jack has no choice but to swim to a lighthouse that is conveniently right next to where the plane crashed. After entering the tower, the player enters the “bathysphere” —most easily described as some kind of underwater elevator—to descend to the underwater city of Rapture. We learn that the city was once intended to be a utopia, built by radically idealistic business tycoon Andrew Ryan. In an interview with game writer and director Ken Levine is revealed that the character of Ryan was inspired by Howard Hughes and Russian-American objectivist...
philosopher Ayn Rand.\textsuperscript{3} Ryan’s goal was to build a city where promising and strong individuals would not be “bound by petty morality” and where they “would not be constrained by the small”. He rejects all notions of state or government control, religion, altruism and any other form of goodwill, what he labels to be “parasitism”. This is also reflected in Ryan’s view on economy: he believes in a system that he calls “The Great Chain of Industry”—most likely a nod to Adam Smith’s concept of the invisible hand—, an economic ideology that greatly favours complete self-interest and a radically free market.

However, when the player enters Rapture, nothing of this utopia remains. After being completely destroyed by a civil war, the city and its people have changed beyond recognition. The discovery of a substance called ADAM had changed everything, as it allowed human DNA to be overwritten and manipulated. Thus, ADAM could be used to acquire supernatural powers, which were soon commercialized in Rapture in the form of plasmids.\textsuperscript{4} Former gangster Frank Fontaine created an industry for plasmids by abusing orphaned girls with the help of Dr. Brigid Tenenbaum, genetic scientist and responsible for the discovery of ADAM. The sea slugs generating the valued substance were implanted into the stomachs of the small girls in order to mass produce it. The unlucky girls were nicknamed “Little Sisters”. Meanwhile, Fontaine had been planning a coup against Ryan, and decided it was finally time to strike. Fontaine was then reportedly killed in battle. Ryan seized the plasmid factories and soon had to deal with a new figure, Atlas. His active resistance to the exploitation of Little Sisters brought about the creation of “Big Daddies”, genetically enhanced humans who are compelled to protect the Little Sisters.

It is at this point that the player is contacted through radio by Atlas, who asks Jack for help in saving his family and the battle against Andrew Ryan. Throughout the game, the player follows Atlas’ instructions and defeats “splicers”, genetically mutilated humans controlled by Ryan, along with various other enemies on the way. When Jack finally reaches another bathysphere, where Atlas’ family was held captive, Ryan destroys it before Jack can save Atlas’ any of them. The player is then guided to Ryan’s headquarters, and after a whole lot of fighting finally meets Ryan in his office. Ryan explains that Jack is his illegitimate child, and that Fontaine had taken him as a baby and put him on the surface. The intention was to later use him

\textsuperscript{3} The references to Ayn Rand are plenty. Andrew Ryan not far off from being an anagram of the writer’s name, and Atlas’ name is conveniently borrowed from Rand’s novel Atlas Shrugs. Rand is also the author of the novel The Fountainhead. Again, the link with Frank Fontaine is obvious. For other cultural references (to Ayn Rand and others) I refer to the BioShock Wiki page. (bioshock.wikia.com)

\textsuperscript{4} To be more specific, plasmids are a processed form of ADAM. However, some plasmids require a second substance, called EVE, to be used. As pointed out by the BioShock Wiki page, EVE is the BioShock equivalent of “mana” in many other games. It is also almost impossible to miss the biblical reference—Adam and Eve taking their fate into their own hands.
as a secret weapon against Ryan. Fontaine orders Jack to kill Ryan with a golden golf club, and Jack cannot but obey, as apparently he was genetically modified to do whatever he is commanded after hearing or reading the trigger phrase “would you kindly?”. We discover that even Jack’s plane crash was no coincidence, but instead was triggered by this very same phrase. In other words, Jack was—unintentionally, of course—responsible for crashing his own plane. At this point it is obvious that Atlas is Fontaine in disguise, and Fontaine finally shows his true colours. After Ryan’s death, Jack is saved by Dr. Tenenbaum and some Little Sisters. She eventually helps Jack to remove the triggering mechanism, after which Jack confronts Fontaine. Subsequently Fontaine injects himself with an enormous amount of ADAM, but with the help of the Little Sisters, the player is able to defeat him after a final encounter.

**Gone Home: General Notions**

Published in 2013, Gone Home⁵ is indie video game developer The Fulbright Company’s first game to hit the market. After a slightly difficult process, the game was ported to current-generation consoles by Midnight City. It was then ultimately published by Majesco Entertainment in early 2016. Much in the same vein as games *To the Moon* (Freebird Games, 2011), *Dear Esther* (Thechineseroom, 2012), *Ether One* (White Paper Games, 2014) and *Firewatch* (Campo Santo and Panic, 2016), *Gone Home* is essentially a first-person adventure game that focuses on the exploration of spaces and the narrative reconstruction of events. Unlike many other first-person exploration games, there is no real horror element present in *Gone Home*. Because of its absence of combat or any other type of intense action, some have—negatively—referred to the game as a “walking simulator”. The reactions to this type of video game seem to be on opposite ends of the spectrum, with players either praising the game or—as is made evident by the many negative comments in the review section of the Steam store—dismissing it completely. Recently, however, scholars such as Koenitz have defended games like *Gone Home*, asserting that it is the “slowness” and the exploration aspect of these type of games that makes them a worthwhile experience. Koenitz, among others, has named this genre of games “avant-garde” and claims that these games “signify the next step in the evolution of narrative-focused games” (3).

In *Gone Home*, the player gets into the skin of Katie Greenbriar, a young American college student returning from a period of travelling in Europe, only to find the parental home in an empty state. Nor Katie’s parents, nor her younger sister Sam is to be found in the house. While the game may feel like a survival horror game

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⁵ Originally *Gone Home* started as a modification of *Amnesia: The Dark Descent* (Frictional Games, 2010), using the HPL Engine 2. Due to problems with licensing for the game engine, the game was developed using the Unity engine instead. Its connection with *Amnesia*, one of the most acclaimed survival horror games, is interesting, to say the least.
at first, similar to the *Penumbra* series (Paradox Interactive) or *Slender: The Eight Pages* (Parsec Productions, 2012), it soon becomes clear that none of the traditional survival horror devices are employed. On the front door, the player finds a note written by Sam, practically begging Katie not to try and find her. Investigating different areas of the house, the player finds letters, notes, magazines, books and other household objects that gradually help lifting the veil of mystery surrounding the preceding events. We learn about Katie’s parents, their occupations and their marital predicament. Most information, however, deals with the growth of Sam’s relationship with Lonnie, her vigorous and feminist high school friend.
Narrative, Storytelling and the Player

Before continuing with my analysis of Gone Home and BioShock, I would like outline some general conceptions and ideas about narrative in video games that helped shape this work. This section is meant to illustrate the complexity of the relationship between narrative, video game, and the player, and aims to contextualize it with examples and appropriate theory. Of course, there is vast amount of literature on narrative available and much of it is beyond the scope of this work. Moreover, narrative as a notion is still being explored within the context of video games. Therefore an extreme condensation is unavoidable. As follows, I have tried to construct these conceptions about video game narrative by relating to my own assessments and combining these with a selection of relevant existing schemas. This section will first discuss some general video game narrative conceptions before focusing on the experience of video game narrative. Finally, it will explore a video game narrative technique, environmental storytelling.

Narrative in Video Games: A Continuum

As we know, the narrative qualities of video games are no longer in question. The argument between ludologists and narrativists has largely been resolved after being countered by a more open-minded approach. As discussed, this does not imply a primacy over the other qualities of games, since the uniqueness of the video game medium—for reasons other than narrative capability—is emphasized more than ever; both ludic and narrative elements have claimed their importance. Yet, narrative has been perceived as something all-encompassing, explaining and shaping everything around us, video games included. In 1966, Roland Barthes had already realized this and worded it accordingly:

> Among the vehicles of narrative are articulated language, whether oral or written, pictures, still or moving, gestures, and an ordered mixture of all those substances; narrative is present in myth, legend, fables, tales, short stories, epics, history, tragedy, drame [suspense drama], comedy, pantomime, paintings (in Santa Ursula by Carpaccio, for instance), stained-glass windows, movies, local news, conversation. Moreover, in this infinite variety of forms, it is present at all times, in all places, in all societies; (“An Introduction to the Structural Analysis of Narrative” 237)

If Barthes would have been there to witness the rise of video games, he would probably have added video games to this list. After all, if other media such as film, music, drama and literature possess some form of narrativity, how could games not? While utterances such as this one may sound very much in favour of the
narrativist camp—and in fact have been used to defend such positions—, the universality and omnipresence of narrative is undeniable. Forty years after Barthes, Ryan has clarified that

 [...] computer games present all the basic ingredients of narrative: characters, events, setting, and trajectories leading from a beginning state to an end state. One may conclude that the unique achievement of computer games, compared to standard board games and sports, is to have integrated play within a narrative and fictional framework. (Avatars of Story 182)

In spite of this, while narrative in video games builds on the classic notion of narrative as found in traditional media, it should be recognized for its traits exclusive to the medium. There is no such thing as a universal narrative. Even within traditional media, narrative occurs in various forms. Ryan points out “narrativity is a matter of degree”. She contextualizes this with an example, stating that “postmodern novels are not nearly as narrative as those of the nineteenth century” (“Beyond Myth and Metaphor” 583). Hence, it is safe to say that some kind of narrative continuum exists within video games as well, especially when one considers the vast array of video game genres available. The archetypal example that is discussed time and again to prove—or disprove—narrative’s realizations is Tetris. Who in their right mind would play Tetris for its narrative qualities? Self-identified ludologist Frasca has argued that the lack of characters makes it hard to recognize Tetris as narrative. Additionally, unlike adventure or action games, abstract games do not as easily fit to the category of “culturally accepted narrative genre” (“Ludology Meets Narratology”). Also on the level of abstraction in games, Celia Pearce calls attention to the level of abstraction of the narrative in Battleship, along with the fact that there are no characters in it. She emphasizes that it is possible to imagine a game without any characters, but that attempting the same is hard to do for a more traditional type of narrative (146).

Player Performance and Constructing Story

Many scholars have reduced video game narrative to some kind of container, where story serves solely to enhance gameplay. Pearce expresses this idea in the following way: “At its highest level, the function of narrative in games is to engender compelling, interesting play (144). But what exactly makes narrative in video games so unique as opposed to other media then? Pearce responds that it has blurred the line between producer and consumer—where in the context of video games, the former would refer to the developer, game designer or “writer” of the game, and the latter to the player, or the “reader”—more than traditional narrative ever could (153). Players are not only readers, but at the same time also performers
and narrators. Frasca has argued that narrative in games is different because of the nature of video games themselves. Unlike traditional media, games are not considered to be representational, but simulations generated by code (“Simulation versus Narrative”). Frasca’s argument is ludologic and of an entirely different nature, but I believe it can be used to stress the same basic idea: the player’s performance is a key element in video games. The way I see it, by actually playing the game—a result of the player’s mechanical input, i.e. manipulating the buttons and joysticks of a controller, keyboard and mouse, or utilizing any other input method—the player co-produces the story. Without input from the part of the player, neither the game nor the narrative will progress; whether the narrative is pre-defined or not has no importance. Since the game narrative is thoroughly connected to the progression of the game, the player is actively helping to construct the story by simply playing the game. Another interesting feature of video game narrative would be that—in many, but not all games—the player often has a chance to have a lasting impact on the further progress of the game, or sometimes even the outcome of it. To give an example, at certain points of the game in BioShock, the player has the opportunity to either “harvest” or rescue Little Sisters. If the player chooses to harvest a Little Sister, he or she will become considerably more powerful thanks to the ADAM provided by the harvest. This will also make the clash with enemies significantly easier for the player and allow for a faster game progression, especially in the earlier stages of the game. What is more important is that the amount of Little Sisters the player chooses to harvest has narrative consequences. The ending of the game will be most pleasing and gratifying when the player rescues almost all Little Sisters, while the player who has chosen power over compassion will experience a more bleak and unhappy ending. Additionally, there is a third ending that is still relatively unhappy, yet slightly more positive than the second.

Micro-narratives

Video games have the possibility to introduce smaller “micro-narratives” within the main narrative structure of the game. Attributing the concept to Jenkins, it is defined by Bizzocchi as “smaller moments of narrative flow and coherence that occur within a broader context of gameplay”. Bizzocchi explains that the narrative arc usually found in traditional media is inapplicable to video game narrative, since the interactive nature of video games clashes with the game designer’s possibility to control this narrative arc. Bizzocchi presents a conceptually more limited framework to replace the arc, which consists out three narrative parameters: storyworld (game environment), characters (populating the game world) and emotion (of

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6 The argument is different in the sense that it is rooted in simulation semiotics; it argues that narrative (which is representational) cannot be manipulated.
player and characters). A good example of a micro-narrative in *BioShock* would be the splicers found mumbling and talking to each other or themselves. In the early stages of the game leading up to the medical pavilion, many of them refer to Doctor Steinman and the idea of surgery to enhance their physical aesthetics, almost as if cosmetic surgery were some kind of artistic act. At this point, the bigger picture is still the player’s goal to simply get to the medical pavilion and look out for Atlas’ family. All the talk about cosmetic surgery is essentially irrelevant to the broader context, but it cannot be disconnected completely from the main narrative. After all, the information the player collects from these micro-narratives anticipate what is about to come soon after; Steinman’s cosmetic enhancements are in reality nothing other than escalated obsession with anatomy. In other words, Steinman is a dangerous lunatic and the player will soon have to deal with him in one way or another. Micro-narratives do not only introduce more variation into the narrative structure of the game, but can also obligate players to think about the relevance of what is being communicated. What is this trying to tell me? Why has it been included in the game?

In games like *Gone Home*, it becomes a lot harder distinguish what the micro-narratives are; *Gone Home*’s puzzle pieces make up the broader context of finding out where Sam has gone, but seemingly every note, letter, or memo is as important—maybe too important to be a micro-narrative—to reconstruct what has happened. Perhaps this is because the starting point of *Gone Home* essentially provides the player with only a single insight; Sam is not in the house. This insight contains no explicit goal or order; it’s not Atlas begging you to save his family, or telling you to do X or Y. However, implicitly the game suggests we should investigate where Sam has gone.
Pseudo-narrative and Emergent Narrative

Brand and Knight have introduced an interesting concept that exemplifies an overlap between so-called “narrative and non-narrative structures”. The concept of “pseudo-narrative” delineates a structure in which the game “tells a story with the help of the player’s imagination” (5). Elements of certain narrative structures may activate the player to brainstorm about possible developments of the story. Furthermore, the game narrative is supported by “extradiegetic narrative supports”. This can be anything located outside of the fictional game world that helps the player make more sense of the game narrative (5). Most notably, Brand and Knight mention the examples of back story in a game manual (nowadays this information would most likely be found online). This conception is closely related to Jenkin’s concept of emergent narratives, where narratives “emerge” through gameplay and there is no real pre-defined narrative structure imposed by the game developers. The only pre-defined structure is the set of game rules specified by the developers. Jenkins refers to Wright’s comment on The Sims (Electronic Arts, 2000) to clarify what an emergent narrative can entail: “it should be understood as a kind of authoring environment within which players can define their own goals and write their own stories” (128). Some examples of games featuring emergent narratives are turn-based or real-time strategy games such as Might & Magic Heroes VII (Ubisoft, 2015) or the StarCraft series (Blizzard), as well as world-building games, such as Cities: Skylines (Paradox Interactive, 2015).

Scripted Trajectory and Narrative

If we continue on the notion of pre-defined narrative structures, it is appropriate to refer to Ryan and Calleja. Ryan has stated that “most interactive fictions trace a narrowly scripted trajectory” (“Multivariant Narratives” 425). While interactive fiction generally only applies to text-based adventure and role-playing games, I believe the same basic idea is valid for many action and adventure games. Players are usually instructed to traverse various areas of the game world, but are sometimes offered the choice to do this freely, deciding which area they will visit first (Ryan notes this, too). The “scriptedness” lies in the fact that there will often only be one right end position that makes the game progress. If the objective is to get from point A to point B, the player can sometimes resort to taking different paths to get to point B, but point B will be the only gateway to game progress; points other than B will be a dead end and force the player to

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7 According to Jenkins, this is only one of four possible ways in which narrative can be mapped onto game space. He also mentions evoked narratives (previously existing story is evoked), enacted narratives (character’s movement through space structures the story) and embedded narratives (game space as a memory palace to be deciphered by the player to reconstruct the plot).
find another way. Of course, this is not the case for every game. Especially role-playing games allow the player to progress in various ways. With scripted trajectory (which tends to be linear) often comes scripted narrative, to be understood as “the narrative content and structures explicitly written into the game by designers” (Calleja 124). Cut scenes will start playing once the player has entered a certain area or upon completing an objective, such as defeating the boss of a level. This is especially so after defeating the final boss of a game. In BioShock it is no different. Once the player has fully depleted Fontaine’s health bar, a cut scene shows how he is then finished off by some Little Sisters.

Interestingly enough, Ken Levine himself discussed the question of scripted narrative in his lecture at the 2008 Games Developers Conference. Levine distinguishes the so-called “push narrative” from the “pull narrative”. The former refers to situations where the player’s hands are figuratively tied—Levine gives the cut scene as an example—and “the information the game designers wish to impart is literally pushed at the player” (Calleja 123). The player can usually not move his avatar or look around freely during these moments. Contrarily, pull narratives require effort from the player and have to pull the narrative to them (i.e. through interacting with objects and the environment). Note how Levine connects pull narratives with the performance of the player and the virtual environment; from this angle, pull narratives do not let the player passively absorb the narrative, but requires them to act.

To summarize, video game narrative is particular for a number of reasons. Firstly, there is a narrative continuum that can be used to describe games. Video games without characters are a possibility, which is challenging—if not impossible—for traditional media to accomplish. Furthermore, the player covers an active role in the progression of the story and can influence what happens to the narrative. Video game narrative can also contain micro-narratives that can incite player reflection over the narrative. Similarly, pseudo-narratives can lead to the same thing. Lastly, even some types of scripted narratives imply performance from the part of the player.
Narrative and the Player: Subjectivity and Experience

It is important to stress that playing games is a very subjective matter. Since narrative coheres with game experience, it would only make sense that it has an experiential dimension as well. The degree of narrative immersion depends on game design, but perhaps even more on the players themselves. Similarly to reading a novel, every player will focus on different elements of the game; every player will “read” the game differently and thus experience narrative—and the immersion that it brings forth—in a different way. Bizzocchi and Tanenbaum mention that both new media and games “suffer from a degree of indeterminacy” (299). Moreover, the scholars stress that

[...] one cannot guarantee that two readers will encounter the same media assets while interacting with a game, or that they will experience them in the same order. Nor can one guarantee that they will observe and attend to the same details of experience. (299)

In their attempt to apply close reading techniques to gameplay experiences, Bizzocchi and Tanenbaum have proposed the concept of an “imagined naïve reader”. In order to arrive to a successful close reading, the scholar has to play the game as if he were he a new, unexperienced player, “one who is encountering the game as a fresh participant” (302). According to Bizzocchi and Tanenbaum, this is only one of the two ways the scholar should consider playing the game. Apart from the enacting the imagined naïve reader, the scholar should also progress through the game enacting specific “performed player stereotypes”, essentially role-playing a specific archetype of player. Where the goal of the first method is “to construct a neutral unbiased experience”, the former technique aims to do the opposite, in order to “discover a specific thing about game play” (304). The authors do, however, reiterate the idea that the unexperienced player’s reading is “a single reader’s experience of an artifact that can conceivably generate an infinitely varied set of possible experiences and readings” (303). Even though deliberately trying to experience the game in various ways is an interesting idea, I cannot help but feel slightly sceptical about it. To what degree one can successfully “enact” these different types of players? In any case, the importance of this theory is that it illustrates the variety of possible player types, while underlining the subjectivity of experiencing gameplay and narrative elements.

Some players might extensively examine the game world that surrounds their avatar, trying to incorporate what they see into the pattern of the narrative structure, while others may focus on mastering the mechanics of the game or progressing as fast as possible. Inevitably, the last-mentioned type of player will
ignore, or at the very least be less attentive to the overall narrative of the game. It should be noted that the role of the virtual game world (and its design) is not neutral here. This is especially the case in walking simulators. For example, in Gone Home “subjective, interpretative thought is encouraged as part of the process of exploration and discovery” (Muscat et al., 13). This can be achieved by employing environmental storytelling techniques, to be discussed in greater detail in the following section. Experientially, environmental storytelling is useful because it can be utilized to force players to recognize the narrative of a game. Of course, the degree to which this technique can be successful depends on its efficient implementation.

While I am generally interested in the narrative developments during play, even I found myself guilty of sometimes dismissing narrative completely. I grew up playing Runescape (Jagex, 2001) as a child. The game started out as a graphical MUD, but grew into what is known today as an MMORPG. The original game had gone through significant changes over the years and eventually dissatisfied a large part of the player base. In early 2013, Jagex revived an older version of the game. Old School Runescape (OSRS for short) was born, and many players who had given up on the game—myself included—picked it up again. OSRS is fairly known for its unique quest system, allowing the player to start quests at any given point, given they have the skill requirements for it. Even though quests are entirely optional, many players choose to complete all of them as fast as possible. This is mainly because completion of all quests rewards the player with a cape that greatly improves the player’s mobility within the vast game world of OSRS. Trying to complete all of the quests, I noticed myself holding down spacebar to skip through all of the dialogue faster. Only sporadically I would bat an eye at the dialogue interface to read what was actually being said, as I could just as easily follow what my quest log told me to do and finish the grind faster. My focus was on progression through the game, rather than the well laid out quest narratives that OSRS has to offer. This was not the case when I was playing as a younger child, where it could take me hours, sometimes even days, to complete a single quest. While today I do not consider the quests of OSRS to be a particularly immersive experience—it does not help that the graphics of the game are far below today’s standards, and the game has a reputation of being played while AFK— I can still fathom how the quest lines in the game are undeniably intertwined

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8 Muscat et al. also refer to his genre as the “First-Person Walker”.

9 The acronym AFK stands for “away from keyboard”. It is typically used as a quick way (usually in MMORPGs or other online multiplayer games) to denote that the player is away from his or her computer for a short amount of time. In OSRS, the term has assumed a bit of a different meaning. Being AFK does not necessarily require the player to be away from the computer; it can also indicate that the player is involved in doing something that requires little to no effort to perform. A lot of gameplay in OSRS simply requires clicking and waiting for an action to complete. Most players
with the overall narrative structure to lock end-game content behind a requirement. The combination works, but the choice was entirely mine to ignore it. Surely, as a child with limited knowledge of English it was more difficult to make sense of the quest narrative, but simultaneously that alone made me engage more with the narrative. This can be explained by what Bizzocchi and Tenenbaum identify as an additional challenge for reading digital media: the difficulty. The experience is influenced by “the skill level of the reader” (300). In other words, mechanically stronger players—players for whom the “interaction has become automatic”—will have more attention to spare than players who are “struggling with the controls and the mechanics of the game” (301). While language comprehension is not necessarily a mechanical trait, the idea is the same; the reading of the game is convoluted.

I am fairly certain many players can recognize the situations I encountered in OSRS. However, I do not believe this implies a denial of the narrative potentials of video games, but rather a willingness to filter narrative out completely, perhaps for the sake of enjoyment. It remains remarkable that some players, despite their mechanical advantages, still do not connect the notions of narrative and game consistently and intuitively. Of course, I am referring to the average gamer here, but since players without an academic background outnumber academics by far, I think they should be considered the most interesting group to deduct conclusions from. As I was browsing the Steam store review section for reviews of more narrative-driven games, I stumbled upon many comments criticizing these games for not actually being games at all (see my note about “walking simulators above). Yet, a game like Gone Home has all the elements required to qualify as a game; the promotional description for it even announces its quality (“a story exploration game”). On top of that, the use of environmental storytelling tactics should in theory only reinforce the merging of game and narrative. I did not think much of it at first, as there are many players who prefer straightforward action over bothersome and lingering storylines that interrupt the flow of the game. Still, it seemed peculiar that a not unimportant number of players dismissed the game simply for being too narrative. An opposite reaction is perfectly possible as well; returning to the example of Tetris—as discussed, not a game acclaimed for its narrative affluence—players can sometimes (metaphorically) see stories in very abstract games. Take this online comment from user “Psychotronic”:

“play” OSRS while simultaneously doing something else, like watching movies or browsing the web. Some even play multiple characters on different game clients at the same time.
Games were always story-telling devices. The parts that can be cut out and posted into some other medium unchanged (such as cutscenes or dialogue) are and always have been the weakest methods of telling that story. The interaction between player and rule set is the strongest. All you need is a protagonist (the player), something that the protagonist wants (the game’s goal), and something preventing the protagonist from getting it (the game’s obstacles). That’s a story. […] I used to dream about Tetris blocks. (Comment on “The Story of Tetris, Auntie Pixelante, 2008)

This section has emphasized that video game narrative (or story) is not only experienced subjectively and differently depending on the player, but also that the way this narrative is experienced can develop over time or depend on the mechanical skill of the player. Perhaps this also signifies that a fully objective analysis of video game narrative will always remain somewhat impossible. Finally, in light of rest of this essay, environmental storytelling can stimulate or compel players to recognize the narrative of a game.
Environmental Storytelling

Now that light has been shed on some the intricacies of video game narrative, we can move on to the discussion of a specific method of realization of this narrative: environmental storytelling. This was mostly inspired by Jenkin’s influential work on the narratological consequences of this storytelling method. Smith and Worch’s 2010 GDC presentation has proven to a valuable resource as well. These sources—as well as many others not considered in this work—generally originate in the game design branch, but this does not prevent them from being extremely useful resources for this analysis.

Environment Beats Cut Scenes

If we take up what user “Psychotronic” had to say about Tetris again, we notice that the elements which are often expected to generate narrative most successfully in video games—cut scenes and dialogue are mentioned, but back story qualifies just as much—are actually among the “weakest methods” of telling a story. Some may experience cut scenes as interrupting the flow of the game. Jenkins explains:

In the case of embedded narratives, the game space becomes a memory palace whose contents must be deciphered as the player tries to reconstruct the plot. And in the case of emergent narratives, game spaces are designed to be rich with narrative potential, enabling the story-constructing activity of players. In each case, it makes sense to think of game designers less as storytellers than as narrative architects. (129)

The role of the game designers as narrators is minimized. Pearce articulates this almost in exactly the same way: “they are not so much storytellers as context creators”(153). The emphasis is truly on the environment that contains the elements for the player to construct narrative. The majority of this is done unconsciously by simply walking through the game environment. In other words, the game world is talking to the player; it is the player who puts everything together, even if it does not always feel that way. The story is told without the use of any obvious, direct form of narration, such as cut scenes, dialogue or back story. Additionally, Jenkins stresses the player’s active role in constructing the plot, echoing Aarseth’s idea of nontrivial effort.
From Theme Park Organization to Game Design

An interesting contribution on some of the techniques used in environmental storytelling hails from a perhaps slightly surprising angle. Don Carson is a former Senior Show Designer for Walt Disney Imagineering. For years, Carson assisted in the design of various Disney theme parks. With his article he aims to report on the real-world techniques and how they can be utilized to create immersive digital environments in video games. Four years later, Jenkins reiterates this in his thoughts on evocative spaces:

The most compelling amusement park attractions build upon stories or genre traditions already well-known to the visitors [...] Such works do not so much tell self-contained as draw upon our previously existing narrative competencies. They can paint their worlds in fairly broad outlines and count on the visitor/player to do the rest. Something similar might be said of many games. (123)

Carson points out theme parks employ various strategies to create the illusion of aimless exploration. He suggests inaccessible areas—which on first glance look accessible to the visitor—can contribute to sustaining the narrative. Space is organised in such a way that visitors (or players, in video games) are tricked into experiencing everything they see as new. Carson calls this technique employed by theme park designers the “Illusion of Complexity” (Environmental Storytelling, Part II 3-4). However, what Carson did not mention is that this illusion can just as easily be broken if the player decides to investigate the game environment in greater detail. A user named “ulix” voiced his frustration about BioShock’s spatial game design on the 2K forums:

While the architecture in Bioshock was beautiful from an artistic point-of-view, when viewed at from a functional perspective it was complete nonsense, and I mean nonsense in terms of room-layout. I found this especially frustrating when comparing it to System Shock 2, which had a very logical map. Why would the builders of Rapture leave empty spaces in concrete, massive buildings? Why long hallways that apparently don’t go through water directly (otherwise the artists would have used glass-walls or windows) without any doors on sides leading to rooms? Etc. It just didn’t make any sense at all and was a real atmosphere killer for me (and it made exploration less fun).10

It should be noted that not only more seasoned players—judging by this user’s reference to System Shock 2 (Electronic Arts and Night Dive Studios, 1999), this user does belong to that group—can encounter this

10 Designed by Ken Levine, System Shock 2 is considered to be the spiritual predecessor of the BioShock series.
problem. For the unexperienced player (Bizzocchi and Tanenbaum’s naïve player) the exploration of an unknown area could be much more interesting. Players who have invested a considerable amount of time playing games are most likely aware of the limitations of game spaces (invisible walls, doors that cannot be opened, world height limits and the like), which can further break the player’s immersion within the game. One of the most striking examples found in BioShock is when the player gets to see the massive underwater city for the first time (Figure 1).

As impressive as a view like this is—and conceivably even more if the player falls for the illusion of complexity—the newer, unexperienced player (the imagined naïve player) will undoubtedly wonder what goes on in these buildings and ultimately discover that BioShock’s game world is more confined than it seem. However, Carson’s suggestion that spaces like these can funnel narrative still apply, even in case of disillusionment. The importance of it is that it makes people wonder, whether the illusion is broken or not. Besides, some players might be too busy paying attention to the primary narrative of Ryan’s speech to be disillusioned.
Environmental Storytelling: Further Developments

From a game design perspective, Smith and Worch have articulated an essential framework for the application of environmental storytelling in games. Environmental storytelling is defined as “staging player-space with environmental properties that can be interpreted as a meaningful whole, furthering the narrative of the game” (16). The scholars then further stipulate that definition, presenting a fourfold understanding of the functions of environmental storytelling. Environmental storytelling

1) Relies on the player to associate disparate elements, interpreting them as a meaningful whole.
2) Fundamentally integrates player perception and active problem solving, which builds investment.
3) Invites interpretation of situations and meaning according to players' views and experience.
4) Can help the player navigate an area by telegraphing.11

Smith and Woch handle a player-centric approach in which the contribution of the individual player in the process of story-building is underlined, much like Jenkins and Carson have done. They also integrate the idea of subjectivity. The player constructs the story, and thus also interprets it accordingly. I chose to include Tarnowetzki’s approach to environmental storytelling as a follow-up because it proposes an interesting division into different environments. Tarnowetzki herself has mentioned that the theoretical resources on environmental storytelling are scarce, and thus proposed an own categorization of game environments. Building on the theory of Smith and Worch, as well as Jenkin’s theory, Tarnowetzki identifies three major environments that can aid in the creation of “both primary and secondary narratives” (76). Tarnowetzki explains:

The avatar’s physical environment exists in a diegetic space (within the narrative and the fictional world) and is what the player’s avatar is meant to perceive as physical within their virtual world. [...] The avatar’s social environment is also diegetic and is the social world within the avatar exists or experiences during the game. [...] providing narrative context and richness. The extradiegetic environment is that which exists outside the fictional game world but is still a part of gameplay. (76-77)

Tarnowetzki stresses that these environments overlap, but that isolation is needed to study them accurately. I believe it is important to note that two of these environments revolve around the game’s avatar, and thus may not be as useful for examining emergent narratives where the player controls a game

11 With this statement, Smith and Worch refer to the idea that the player can prepare for something that is about to come thanks to messages conveyed by environmental storytelling.
setting as a whole, as opposed to one distinguished player character\textsuperscript{12}. Examples of this can be found in a variety of game genres, such as god games or real-time strategy.

More recently, Livingstone, Louchart and Jeffrey have considered how video games can employ archeological storytelling, a form of environmental storytelling that tries to attach “meaning to artefacts and inference about their significance and the societies and stories behind them” (5). The goal of these scholars is to determine how to incorporate the core of archaeological thinking into a video game that can be used for education in archaeology. They emphasize that games like these should not force players into a narrow, single interpretation. Instead, players should be confronted with various possible histories. The novelty in this paradigm consists in the critical attitude that is encouraged through these games: “newly discovered artefacts come not only with their own fragments of story, but might lead to new possibilities for previously discovered objects – or allow the player to conclude that previously held ideas need rethought” (7). Archaeological storytelling in itself is also relatively new, but does have potential for the future, and this both as a technique in its own right as in the implementation in video games.

\textsuperscript{12} It is also possible to control multiple characters, but never at the same time. In some games this is required. An example is \textit{Heavy Rain} (Sony Computer Entertainment, 2010), where the player switches between four different characters.
Comparative Analysis of *BioShock* and *Gone Home*

Along with introducing some newer theoretical background, this section will try to incorporate the various conceptual theories identified in the previous chapters operate within *BioShock* and *Gone Home*. Since many of these theories easily flow over into one another, it was challenging to come up with a division into logical categories. As not many studies that apply environmental storytelling to games in great detail have been published, I had to rely mostly on the interpretation of theoretical resources for this analysis. Coincidence wants that one of the few in-depth applications of environmental storytelling to video games—Tarnowetzki’s—concerns the third instalment in the *BioShock* series, namely *BioShock Infinite*. While this game is, unlike *BioShock 2*, not a sequel to the original in a narrative sense, it does resemble both previous games in terms of overall atmosphere and theme. I must add that Tarnowetzki’s method of discussing storytelling in relation to various types environments has been an enormously useful tool to help with the arrangement of this section. However, I want to stress that I do not seek to simply reiterate. Instead, my goal was to use it as one framework, combining it with others and utilizing it in a way that emphasizes the storytelling techniques exerted in *BioShock* and *Gone Home*. I should also emphasize that my approach is largely player-centric, since it is also based on the work of Smith & Worch.

For this analysis I will consider what Tarnowetzki designates the “Physical In-Game Environment”. Admittedly, I found the use of the word physical in the context of a digital world a bit confusing. Tarnowetzki defines this environment as “what is considered physical in relation to the avatar and encompasses the fictional world” (120). Anyhow, this environment is essentially what is understood under game world or game environment in the widest sense possible. In games like *BioShock* and *Gone Home*, this is the three-dimensional game world that is rendered, along with the sound design and all its other artifacts. I have distinguished the following categories within it: areas, objects, ambient sound, characters, music and traces.
Areas

With the notion of area, I refer to the physical locations or environments the avatar is located in, traverses, or can distinguish at a certain point of the game. Areas are the bigger constituents of environmental storytelling that contain objects, characters, music, sound and traces, all of which can produce narrative on their own. A major difference between the areas found in Gone Home and BioShock is the way they are structured. As we will see, this does not remain without consequences for the narrative.

The game world of BioShock consists out of fifteen unique and separated areas. I say separated, because the different areas in BioShock can better be understood as levels. Calleja mentions how game spaces often seem contiguous, or are represented as such. However, there are still often “breaks in the flow of navigation” (82). In many games, the player is able to teleport between two separate zones or areas within the game world. This is the basic concept of a rhizomatic system. It is based on Deleuze’s and Guatari’s notion of rhizome; “a system made up of linked points, without a hierarchy or center” (qt. in Calleja 81).

Though, in BioShock the player does not really teleport around. There are games which feature actual teleporters, or some kind of magic portal to facilitate teleporting, but BioShock is not one of them. Instead, the developers have chosen to mask these breaks in gameplay (and thus also in narrative) by “channelling players through locations in which the interruptions make logical sense within the fiction of the world” (82).

Upon successfully fighting their way through a level, the player will encounter an entity that can be interacted with. We can distinguish two different methods of crossing the inter-area boundary. The most common one is the large bulkhead (Figure 2), but sometimes Jack will also be able to make use of a bathysphere after interacting with a lever. In both cases we do not get to see the transportation; a loading screen appears for some time (Figure 3), after which the player suddenly finds himself in the new area, with the docked bathysphere or the heavy door already behind his back.

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13 As perceived by the avatar, of course.
In contrast with *BioShock*, *Gone Home* presents only a single area that the player can access in its entirety (the house). Even though there are a few rooms within the house that cannot be accessed immediately, *Gone Home* features no loading screens or other interruptions. This causes the narrative to feel way more immersive than *BioShock*’s. The rooms that are inaccessible at first require the player to obtain certain
information before being able to enter. For example, the player cannot access the attic without the right key. The process of getting the key involves finding a chain of different notes and doodles first; in the process the player is exposed to a lot of narrative developments. Only after completing this chain the player is able to access the hidden compartment where the key is located. Also note how the illusion of complexity—as discussed earlier in the context of *BioShock*—does not apply to the spatial structure of *Gone Home*. Every room in the house can be accessed, provided that the player follows the right steps first.

In addition to the previous, Smith and Worch have argued that the concept of “dynamic history making”\(^\text{14}\) is a method of environmental storytelling that tries to reflect “the player’s actions and agency” (64). Unfortunately, most single-player games have a linear structure which discourages revisiting areas, as there is no real reason to do so. The scholars argue that backtracking (revisiting areas the player has already traversed) and seeing the results of the impact the player has had on a game environment is equally a way that generates narrative through game spaces. Imagine playing a first-person shooter game with a relatively non-linear structure. It is perfectly possible that one blows up a building to complete an objective, and later have to pass that same building again. Chances are that the player immediately recollects what has happened after seeing the ruins of the building, upon which the mental reconstruction of these past events will take place. *Gone Home* utilizes this technique to a minimal extent. This is possible mainly because—even though the main narrative structure is ultimately linear, at the end of the game the player will have discovered the same things about Sam; the ending will be the same—*Gone Home*’s game area, as well as the game’s mechanics allow for—and in some cases require—backtracking to progress in the game. The loose panels that remain lying on the floor in the hallway are a good example of this. *BioShock* on the other hand, allows for backtracking (through bathyspheres or doors), but does not show any signs of player agency in the already completed areas; the areas remain the same as they were before. What both games do have in common in terms of area, however, is that they allow for a relatively free movement within it. In *Gone Home*, the player can choose where to go first. After having entered the front door, the player can already head in several different directions. *BioShock* allows the player to move freely within the game environment, but there is eventually only one right way to go. This optional free movement allows video games to be experienced in various ways by different players. Depending on the route they take, or which part of the area they decide to explore first, the environmental clues they detect will differ. Thus, the possible narratives one extracts from these clues will also differ for every person.

\(^{14}\) This entails that players are ideally involved in the “history making of the world” (64). The active role of the player (i.e. constructing the story) should be identifiable from the game area after returning to it.
In *Gone Home*, the lighting in the house is also not unimportant. On first sight, the amount of light in the house seems alarmingly low. One cannot help but feel uneasy in the dark hallways of a house the size of a small castle. Many rooms are pitch dark upon entering and require the player to turn on a light switch to reveal what is in them. Light—or the absence of it—creates certain expectations. Many players—myself included—would probably expect the worst; someone or something malicious can appear at any time. This is especially so because of the game’s first association with first-person survival horror games. The contrast between light and darkness can essentially be considered a trope of this video game genre; the presence of it in *Gone Home*, a game that only *looks* similar enough to most survival horror games in the first stages, is enough to activate the same sentiment of fear. In Calleja’s theory, this could classify as a pseudo-narrative element. In *BioShock* the player almost never sees the light either. Rapture is veiled in a perpetual gloomy darkness that is equally as suggestive. Of course, it does not help that the city lies underwater (and that in some areas there are not a lot of windows, either), but the darkness must have been a deliberate game design choice. Rapture is full these type of things; overall chaos and disorder rule all the areas. The environments are wet, disorganized and mostly abandoned. All of these things actively make the player reflect, creating an own hypothesis of what has happened. As Smith and Worch have stressed, an important property of environmental storytelling is that it is open to interpretation (28). These pseudo-narratives can also be understood as micro-narratives; they are not significant in terms of understanding the main narrative.
Objects

Objects within these two games occur in many shapes, colours and sizes. They are, besides the game are, the most commonly used to generate narrative and crucial for the development of narrative in both BioShock and Gone Home. In BioShock, the player can pick up a large variety of objects. In the very beginning of the game, Atlas urges the player to pick up a wrench to be able to defend himself from splicers. Later the player can find or acquire various other weapons, such as pistols, machine guns, and custom-made guns that are do-it-yourself assemblies of components. Ammunition and EVE are the scarcest resources to be found in the game world, but possibly also the most useful for the player. Other things players can find and pick up include various types of and drinks, bandages, money, grenades, and even cigarettes. These objects are cluttered throughout Rapture, but can also be looted from defeated enemies. However, most of these items do not have a specific narrative use, so I will not discuss them in further detail.

The audio diaries are arguably what characterizes BioShock the most (Figure 4). On various occasions, players are able to find recording devices spread around the city of Rapture. These are essentially tape recorders that contain audio diaries. These were recorded by some of the characters found in Rapture. After picking up the first audio diary, the game will display a help caption on screen that explains where to find them again after picking them up for the first time; listening to them again is possible. Gone Home utilizes a similar tactic, but instead of audio logs, the player can discover portions of Sam’s journal. In addition to this, the game developers have chosen to fill the physical game environment with all sorts of
textual artifacts (notes, drawings, letters, scribbles, ...) that do even more narrative work (Figure 5). Just like the recording devices, these objects have to be actively searched for. A fundamental game mechanic in BioShock sets it apart from Gone Home. In BioShock, only the audio diaries that are crucial to the primary narrative will automatically be played. Upon finding and collecting a new diary, the game will offer the player the option to play the message, though the player can choose not to listen to the message yet. This means that—depending on the player’s choice—some players will have significantly less narrative information. While most of these diaries contain micro-narratives, they can—as was assessed earlier—make players more invested in the main narrative. In Gone Home, Sam’s journals play automatically when picked up. This might seem like an unimportant factor, but it takes away the possibility of choice.

Figure 5: A note from Sam to Katie.15

As mentioned before, some of the objects in BioShock are only functional gameplay-wise, as they are necessary for progression; Jack needs weapons, ammunition and EVE to defeat enemies. Consumables and some objects such as keys fall under the same category.16 In Gone Home things are different. Objects can be picked up, examined, put back or thrown away; most of these objects are everyday household objects. Unlike many of the objects in BioShock, the vast majority of objects in Sam’s house are all components of the bigger narrative. Though, as in any game, there are also objects—think of the food items in the refrigerator—that do not actively generate narrative. However, all of the objects in there in the first place to amplify the realism of the story Gone Home is trying to create. In a game that relies so much on

15 The note reads: Katie – Mom and dad were going to make up the guestroom for you to stay in over the summer, but you came home on such short notice that they weren’t around to do it. You can use my room if you want. I won’t be needing it anymore. – Sam.

16 Unlike the attic key in Gone Home, the keys in BioShock do not require the player to go through a long chain of narrative events.
environmental artifacts to tell its story, nothing can be missing. I believe this dynamic can work both ways; environment amplifies narrative, while narrative amplifies the environment. Think of Lonnie’s final letter—actually more of a drawing—to Sam (Figure 6). The drawing is the environmental part which generates the narrative. It explains that Lonnie has finally left. Examining the drawing, one can discern tears that have marked the paper. It is unclear who has shed these tears, which raises new questions and possible pseudo-narratives about how this must have transpired. Additionally, the split heart necklace (the object, not the drawing) acquires a substantially stronger emotional significance.

Another good example of objects with narrative embedded in them would be the many advertisements found throughout Rapture (Figure 7). They give the player a chance to imagine what Rapture must have been like before war and greed destroyed everything. Additionally, the abundance of posters advertising plasmids and ADAM indicates that it is not so much money, but instead the genetic-altering material that governs Rapture.

Figure 6: Lonnie’s goodbye drawing of a split heart necklace.

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17 Lonnie and Sam had developed a very intricate relationship; they were essentially a couple, despite the disapproval of Sam’s parents.
Figure 7: An advertisement poster for Dr. Steinman’s cosmetic surgery.
Ambient Sound and Music

I have combined these two forms of environmental storytelling into one subcategory because they predominantly function in the same way. Both of these environmental manifestations—sound is an acoustic phenomenon and can thus be perceived by the avatar—can produce additional meanings with the help of the player’s input. In that sense, they are no different from the way any other environmental element.

In the very beginning of *BioShock*, when Jack has only just descended to Rapture, and barely even knows who Atlas is, this man asks him a favour: to save his family. The moment Atlas starts his begging, the background music conveniently kicks in; it is a short and sad violin piece. This is a bit of a particular case; the music one hears does not sound like it is actually played *within* the physical in-game environment. Usually, if the player hears music or sound, it is produced within the environment of the avatar, but here the quality of the sound is remarkable in comparison to the music we hear elsewhere. Does Jack hear the music? It is difficult to make assumptions about this. The fact that Jack finds himself in a moving elevator for the duration could explain it, but in this case the music might just be an extradiegetic element. Anyhow, if one considers this music to be a diegetic element one can conclude music is employed as a means to convey additional emotional attachment to the message. The narrative such music can produce is one of empathy: the sad tones of the violin incite some sort of compassion, even though the player has absolutely no knowledge about this individual. The music we hear elsewhere in Rapture roughly dates back from the same period in which *BioShock*’s events take place. In an interview, Emily Ridgway, whose record collection constitutes a large chunk of the full soundtrack, Ridgway shares some of her thoughts on the use of music in *BioShock*:

> The songs themselves, there's a really interesting juxtaposition of...a happy quirky musical...razzle dazzle number and then...they'd be singing about...how the world is ending...It was supposed to mirror the optimism and the decay at the same time...those two things sort of coexisting with each other.  

18 This information was obtained from the *BioShock* Wiki Page.

This is perhaps one of the best illustrations of how an environmental element, such as music can produce not only straightforward narratives, but also more complex stories and subjective metaphorical interpretations. In *Gone Home*, music often accompanies Sam’s journal narrations. Similarly to *BioShock*, the music will correspond to the appropriate mood that is conveyed through the primary narrative. Ambient
sounds, again, have much of the same effects. Especially in *BioShock*, they are a reminder of the fact that we are in some kind of Atlantis; we hear bubbles, moving water and what sounds like an enormous sea creature. These sounds can incite further reflections on the near future for the avatar. Will I get out of here? In *Gone Home*, rain and thunder realize a climate of suspense: the avatar is alone in a large house where everything is dark; it rains, and every now and then the thunder rolls.
Non-Player Characters

Non-player characters are somewhat of a special category. They are living entities within the physical in-game environment. Though, in *BioShock* the player cannot really interact with non-player characters.\(^\text{19}\) Through the secondary narratives they generate, the player can adjust their idea of what Rapture’s society must have been like before it turned into a dystopia. At various points in the game, the players will see ghosts appear in certain areas. While these ghosts may not be physical in-game NPCs\(^\text{20}\) in the strictest sense, the player still perceives the ghosts physically. The audio diary of Bill McDonough clarifies how this is possible:

> Seems like some poor blighters have started seeing ghosts. Ghosts! Ryan tells me it’s a side effect of this Plasmid business. One poor sod’s memories getting passed on to another through genetic sampling. Leaks. Lunatics. Rebellion. And now bleeding ghosts. Ain’t life in Rapture grand?\(^\text{21}\)

In other words, the ghosts appear as a side-effect caused by the use of recycled ADAM.\(^\text{22}\) In addition to the optional narratives that the audio diaries provide the player with, the ghosts are a second important way for the player to learn about the city and its past inhabitants. In that sense, they are of the same calibre as audio logs. Nonetheless, it concerns a scripted form of narrative that Levine would describe as a push narrative; just like Atlas will inevitably start commanding the player through radio communication, the ghosts are predetermined to appear once the player crosses a certain point in the game environment. Unlike the audio diaries, the ghosts have the physical in-game environment to augment their narrative potential. At the same time this also implies that the audio diaries have a greater pseudo-narrative quality, despite being scripted push narrative. Since *Gone Home* does not feature any NPCs, it cannot employ this tactic as an alternative to journals or (textual) objects in the way that *BioShock* does.

A concept stressed before in this essay has been the performance and agency of the player; environmental storytelling can help translate the lasting effects of some player choices in a subtle yet intriguing manner. Smith and Worch give the example of the wandering Big Daddy: after harvesting or rescuing a Little Sister, her guardian will wander around the area to find his Little Sister. He will check her den, but realize she is

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\(^{19}\) Apart from killing, or in case of Little Sisters harvesting or rescuing

\(^{20}\) Non-player characters

\(^{21}\) Transcript of "Seeing Ghosts" taken from the BioShock Wiki
not there. Visibly mournful, the Big Daddy will continue his march, hoping to reunify with his Little Sister (77).
Traces

According to Tarnowetzki, “environmental traces are objects, images, artifacts, etc. within the physical in-game environment attributed to characters that exist within the fictional world of the game and require ergodic effort on the part of the player to construct their meaning to the narrative or fictional world” (91). My conception of trace differs from that of area in the sense that it is smaller in scale. Traces are—much like areas—instances where objects, characters and other artifacts come together. I would propose to nuance Tarnowetzki’s definition and emphasize that they are often more a collection of various different traces that are deliberately placed together. Single artifacts on their own can provoke story and meaning, but when they are combined with others one ends up with a more meaningful whole. I propose the term combined trace to refer to instances which blend multiple artifacts (or simple traces) together. Take this example from BioShock (Figure 8):

![Figure 8: A smuggler has been punished severely.](image)

In this example, we see a figure who has been hanged and has been left on display for others to see. The flag-like with the text “Smuggler” on it behind the figure directly illustrates the reason for his punishment. If we look further down (Figure 9), we can distinguish a suitcase with a cross and a Bible in it. Some paperwork has fallen out of the briefcase, and most of all, it has been opened. This might suggest that some kind of physical aggression occurred immediately after our smuggler was discovered. Finally, we have the two golden arms that hold up two of the three ropes. The third rope is secured to the television screen
above. All of these things can in one way or another be associated with Ryan. Under the golden arms, we read “The Great chain”, a concept of Ryan’s philosophy. Ryan is also known for his condemnation of religion. At this point in the game, Ryan has already appeared previously on the television screen, to warn the player to stop interfering with his practices. This is a combined trace; we intuitively start connecting multiple elements of a different nature into one scene, and derive a number of things from it. Firstly, Ryan is truly in control here (which is also confirmed by the primary narrative of Atlas talking to the player: “He’s the one who built this place, and he’s the one who run it into the ground.”), and he wants to prove it. Secondly, it is possible to smuggle wares from the surface, but you can get caught, and if you are, you will be punished severely.

Note that the combined trace is a lot smaller in scope than an area, but its narrative implications can be just as significant. This scene does not take up too much space, but it incorporates various elements of the physical in-game environment into one whole. I want to point out that traces do not necessarily have to be a combination of multiple artifacts. A trace can just as well be only blood on a wall. Though, taking away all the other elements of this scene would not have produced something as narratively strong as this. Similarly, if the game designers would have presented us with just the man hanging, or the briefcase with bible and cross, it would have been more difficult to connect it to all these other notions. Thus, the narrative success of a trace depends on the number, as well as the variety of artifacts involved. Smith and Worch seem to carefully confirm this idea; they stress that what I have called combined trace is “the result of combining elements that already have inherent meaning” (49).
Smith and Woch refer to a similar combined trace (although they do not name it) in their presentation. The combined trace features an ATM that has fallen over and has crushed a splicer. Most likely the splicer will have tried to steal from the ATM, but has only found death instead. All the elements can be linked to each other in some way, but still carry individual meaning. According to Smith and Woch, the disparate element is what makes the generation of compelling narratives possible. If the splicer would have been crushed by an ordinary rock, it would generate that same meaning. Maybe this is the reason why it is hard to find traces in Gone Home. All the objects found within the house are mundane and bland. There are also no other characters in the physical in-game environment, so something like these two examples would be impossible to achieve in a game like Gone Home. Though, there is one archetypal example of trace to be found in Gone Home, but it has a twist to it. There is a moment in which the player enters the bathroom on the first floor. After turning on the light switch, the first thing one spots is a bathtub with red splatters all over it (Figure 10). Immediately, one is compelled to assume the worst and associates the blood with murder. Connecting this to the main narrative is an effortless process. Judging by some of Sam’s notes, she is not having the best time of her life. Not only is Sam struggling to find new school friends after having moved, but her unstable emotional state denotes that she is still coming to terms with her (sexual) identity. Such narratives are immediately proven to be wrong once the player considers the red bottle next to the bathtub. The trace is disguised as another trace: instead of suggesting murder or suicide, the hair dye proposes a more positive narrative; Sam and Lonnie have unintentionally made a mess while dying Lonnie’s hair.
Figure 10: Bathtub with red splatters: not what it seems.
Conclusion

Utilizing established frameworks which have originated from different disciplinary angles, this essay has tried to demonstrate the unique complex workings of narrative in video games, focusing on the two cases of *BioShock* and *Gone Home*. More specifically, it has examined the notion of environmental storytelling in these games, where narrative and ludic elements come together.

A comparative analysis of these two games has shown that environmental storytelling techniques can generate specific types of narrative through environmental categories in the in-game world as perceived by the avatar. The environmental categories identified were area, objects, non-player characters, ambient sound, music and trace. This essay has also nuanced the concept of trace, and has proposed the idea of a combined trace, which combines various types of narrative-generating environmental artifacts into a bigger produces additional narrative meaning as opposed to the single environmental categories.

Furthermore, this essay has also tried to justify the subjective experience of narrative, stating that narrative is as much generated by environmental clues and artifacts as it is constructed or co-produced by the player. This co-production of the player can lead to new forms of narrative, even in games with a relatively linear trajectory or containing scripted narrative elements, such as pseudo-narrative, micro-narrative and pull narrative. This comparative analysis has also emphasized that environmental storytelling methods can also incite player reflection on the narrative, remind the player of its agency on the environment, and

Having based my comparative analysis mostly on the theories of Jenkins, Smith and Worch and Tarnowetzki is itself a limitation of this work: the future hopefully brings more discussion of environmental storytelling from points of view other than game design.
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