Environmental Storytelling, Ideologies and Quantum Physics: Narrative Space And The *BioShock* Games

Samuel Zakowski
Ghent University
Blandijnberg 2
9000 Ghent (Belgium)
+3232484813
Samuel.Zakowski@UGent.be

ABSTRACT
In this paper, I present a narratological approach to the *BioShock* trilogy of games. I look at three narratological levels as they relate to space. At the level of the storyline, a large part of the game revolves around the piecemeal construction of the narrative of the game space – the narrative of the player's avatar is developed alongside the narrative of what happened to the space he is moving through. At the level of the storyworld, the game space symbolizes ideological oppositions – many locations are appropriated as a way of opposing the dominant ideology of the game space. At the level of the narrative universe, I focus on the last part of the trilogy, which is, to a large extent, a story about the story and, hence, metaleptic. The player and his avatar move through many different storyworlds and storylines, all alike yet subtly different from each other.

Keywords
BioShock; space; metalepsis; possible worlds.

INTRODUCTION
Narratologists have for some time been pointing to the relative theoretical neglect of the experiential category of space in favour of time. In general, time is regarded as a fundamental category of narrative – a story is composed of a succession of events, i.e., of a sequence (cf. e.g. Chatman 1978, 43; Ricoeur 1980, 178); space, on the other hand, has been treated as the 'setting' or 'background' of the narrative, limiting its appeal to theorists (Ryan 2009, 420). As recently as 2009, Mieke Bal claimed that the "concept of space" was still only vaguely described in narratology, and that it was wholly underrepresented in contemporary academic literature on narrative (2009, 192).
Although it is true that spatiality has not garnered much attention from narratologists – especially compared to temporality –, there have been some important steps forward. Bakhtin's notion of the chronotope (1981) has engendered much interest in scholarly circles; Zoran's levels of space structuring (1984) built on Bakhtin's insights to

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emphasize the intertwining of temporality and spatiality in stories (cf. also Tversky 2004; Mikkonen 2007). In the last few years, space has even been regarded as constitutive of narratives (Baynham 2003; De Fina 2003). What these approaches have in common is that space is not just considered a background against which the events of the story unfold – instead, space is an important means for the author to structure the plot and increase immersion.

For computer games, the situation is even more pronounced. Aarseth simply states that spatiality is the "defining element" of games (2001, 154), while Jenkins (2004) argues that game developers are "narrative architects" instead of storytellers; Nitsche (2008) devotes an entire monograph to an exploration of space in games.

In this paper, I provide a narratological account of space and spatiality in the *BioShock* trilogy of games. My aim is to demonstrate that, far from being a mere setting against which the events in the stories occur, space is fundamental to three levels of the narrative: the plot, the storyworld and the narrative universe. On the level of the plot (or the storyline), space is thematized as one of the thrusts of the narrative. The narrative of the game consists of the player's own story as he travels around the game world, but it also revolves around the game world itself – the player gradually finds clues which are scattered about, providing him with an emergent picture of what happened to this fictional world. On the level of the storyworld, i.e. the world in which the events of the storyline play out, space is a battleground for different political or philosophical views – many locations reflect changing ideological currents and political machinations. The narrative universe, finally, encompasses not only the 'actual' game world which you, as the player, inhabit and experience, but also the possible worlds which could have happened but did not. On this level, I will consider hypothetical, counterfactual worlds which interact or interfere with the actual world. As such, my approach follows Herman's (2002, 13) 'ecological' view of narrative interpretation – several different levels interact to provide an expansive, multi-faceted approach to narratives. Before proceeding to this analysis, however, I present an overview of the plots of the *BioShock* games.

PLOT OUTLINE[1]

BioShock (2K Boston & 2K Australia 2007; henceforth *BS*) is set in 1960. The player assumes the role of Jack, a passenger on a plane above the Atlantic, when it crashes into the water. The player swims towards a lighthouse where he finds a 'bathysphere', a submarine vessel which takes him to a city deep underwater, named Rapture. As an introductory film in the bathysphere informs, Rapture was created by the entrepreneur Andrew Ryan in the mid-1940s as a libertarian paradise where like-minded individuals could go and do business, research cutting-edge technologies and let their artistic juices flow – in general, to escape the crushing hand of the government and find near-complete economic, scientific and creative freedom. However, when Jack arrives, it is clear that something has gone terribly wrong – Rapture is roamed by people who have lost their minds and attack on sight, and the place has fallen entirely into disrepair. Over the course of the game, while the player travels across the different regions of Rapture, it transpires that scientists had found sea slugs which produce stem cells – in modified form and injected into the body, they transform the user's DNA and provide him or her with tremendous, superhuman abilities, such as the ability to shoot fire from one's fingertips, freeze people, use telekinesis, and so on. However, ADAM (as this substance is called) is enormously addictive, and extended use leads to insanity. This is what happened to Rapture – the majority of its inhabitants, their minds destroyed by ADAM use, turned on each other, their powerful abilities reducing this utopia to a decaying death trap. Jack is

guided through Rapture by Atlas, a hero of the working class of Rapture. The working class consisted of laborers brought in to create the city of Rapture; however, many of them were reduced to extreme poverty after their work was done – once in, one could never leave the city, to prevent it from being discovered by the surface world. Rapture, as an example of extreme capitalism, provided no social safety net for its citizens, who were left to fend for themselves – Atlas channeled their discontent into an uprising against Rapture's upper class, which coincided with increasing numbers of ADAM-addled citizens (or 'splicers') attacking people in the streets. Ryan, unable to maintain order, imposed martial law and was bogged down in a war with both Atlas and the splicers. After a startling revelation, in which Jack turns out be Andrew Ryan's son, Atlas reveals himself to be Fontaine, a smuggler turned most successful business man in Rapture. When Ryan thought Fontaine had become too powerful, the latter staged his own death and took on the identity of Atlas. Fontaine hoped to use Jack to kill Ryan (and succeeds in doing so), but then turns on Jack – his plan is to take the ADAM to the surface and sell it there, but Jack manages to stop him in a climactic final battle.
In *BioShock 2* (2K Marin & 2K Australia 2010; henceforth *BS2*), set some ten years after the events in *BS*, you play as 'Subject Delta', a Big Daddy – these were men who were grafted into hulking diving suits, which enabled them to withstand the extreme pressures outside Rapture and make repairs to the city where needed. Eventually, they were bonded to so-called Little Sisters, little girls who were the only means of procuring ADAM after the majority of the sea slugs were killed in one of the many shootouts in Rapture. Only the Little Sisters could extract ADAM from the dead splicers lying around Rapture, which was then recycled for fresh use. However, they were prime targets for splicers who wanted the ADAM as well and so had to be protected. Their ferocious strength and the near-impenetrability of their armor made Big Daddies prime candidates. As Subject Delta, the player was responsible for the Little Sister Eleanor, but she was taken from him by her mother ten years before the events in *BS2* – the game consists of Delta's attempts to get her back. Eleanor's mother, Sofia Lamb, was a psychologist hired by Ryan to treat Rapture's citizens who suffered from anxiety and depression due to lack of income, sunshine, and everything in between. Secretly, however, she concocted the plan to change Rapture to a more altruistic utopia, where the good would not be equated with the Self but with the We. Ryan noticed her growing clout with the downtrodden people of Rapture and attempted to stop the 'rot' from spreading, but many people flocked to Lamb's philosophy of 'The Rapture Family'. Ryan eventually locked her up in Rapture's penal colony (after which her child was stolen from the caretaker Lamb assigned to her), but even there, her influence grew – she managed to lead an uprising to take the prison for herself and remained there during the events of *BS*. After many trials and tribulations, Delta manages to defeat Lamb and get Eleanor back – he even manages to get her to the surface.

BioShock Infinite (Irrational Games 2013; henceforth *BSI*) is set in a totally different context: the year is 1912, and you are playing as Booker DeWitt, a private investigator. The player is being rowed towards a lighthouse, where he finds a chair which launches him towards a city in the clouds called Columbia. Columbia was founded by a priest named Father Comstock, who was disillusioned with the United States' increasing integration of minorities – as such, Columbia's is a very racist society, where menial labor is left to the 'lesser' races, and white people are the ruling race. Booker's job is to retrieve a girl, who, he finds out, is being kept prisoner inside a giant statue in the city. Booker manages to rescue the girl, Elizabeth, after which they try to find a way off Columbia and back to the surface world. During their travels, Booker discovers that Elizabeth has the ability to create so-called 'Tears' – these are tears in the space-time

continuum which enable Elizabeth to pass through to parallel worlds. For example, during an uprising of the 'lesser' races, Booker and Elizabeth find that the weapon smith who was supposed to provide the weapons for this uprising was murdered. Distraught over the fact that this eliminates the one chance these people had to claim their freedom, Elizabeth opens a Tear to a parallel world where the weapon smith was not killed and where the uprising is successful. Bit by bit, Booker and Elizabeth discover the history behind Columbia and Elizabeth's ability. Comstock had a scientist create a machine that could create Tears, through which he could see the future and eventually appropriate the title of 'Prophet'. However, exposure to these Tears messed up his genetic structure and left him sterile; using the Tear device, he also saw that Columbia would fall if he did not have an heir. This is where things get tricky. Comstock used the Tear device to create a portal to a dimension where he did not take a baptism and did not become Father Comstock, but where he did have a child. Through intermediaries, he managed to convince his alternate self to sell the child to 'Father Comstock' (without knowing that this was actually he). However, during the transaction, this alternate self had second thoughts and attempted to wrest the child from Comstock's hands while Comstock was returning to his own dimension. During this struggle, the finger of the child (i.e., of Elizabeth) was left behind in the alternate dimension. As such, Elizabeth exists in two different realities, which is hypothesized to be the reason behind her power to create Tears herself. This alternate self of Comstock turns out to be none other than Booker DeWitt. The scientist behind the Tear device, remorseful about her actions, and seeing through the device that Elizabeth will lead Columbia in a successful attack on the surface world, travels to a parallel reality where Booker exists (and not Father Comstock) and hires him to kidnap Elizabeth and stop her from becoming Comstock's heir – i.e., to travel, via the Tear device, to the parallel world where he also exists as Comstock and where Comstock has taken Elizabeth as his heir. Elizabeth eventually decides that the only way to stop Comstock (and herself) from going to war with the surface world in all possible realities is to kill Booker before a cut-off point – in this case, the baptism which he denied in some worlds (to remain Booker DeWitt) and accepted in other worlds (to become Father Comstock). By drowning him before he can reject or accept it, she ensures that Father Comstock cannot come into existence and cannot create Columbia. What all of this has to do with the first two *BioShock* games, will become clear in due course.

THE STORYLINE: SPACE THEMATIZED AND ENVIRONMENTAL STORYTELLING

I should make clear that I will not treat all three games in-depth in every one of the following sections. This section, for example, will focus mainly on *BS*, while the next one will focus on both *BS* and *BS2*; the last section will be concerned mainly with *BSI*. This does not mean that the conclusions from each section do not apply to the other game(s), but that I wanted to keep things reasonably clear and concise.

In *BS*, as will have become clear from the plot outline supra, the player, as Jack, is finding his way through Rapture, looking for a way to escape back to the surface. This is the narrative of the game – the path the player takes, the choices he makes, the guns he chooses, the splicers he kills, and so on. All of these elements combine to form 'the' story of the game – from the sequence where Jack crashes into the Atlantic up to the point where he defeats Fontaine and is presented with one of the possible endings in a closing montage. However, there is another narrative which the player is confronted with simultaneously. During his travels around Rapture, the player often finds so-called 'audio diaries' – recorders containing the thoughts, plans, desires and doubts of the people of Rapture, from its beginnings in the 1940s up until Jack's arrival in 1960. They are not ordered, so, for example, the player does not first find an audio diary dating back to

November 1946, and then one from December 1946, and so on. Rather, they are placed strategically so that the player gradually piece together what happened to make Rapture the broken-down place Jack encounters. The audio diaries generally offer eyewitness accounts of or reactions to important occurrences during the fifteen or so years between Rapture's opening and the player's travels – in that sense, the player still needs to combine these accounts with clues furnished by the environment, information derived through the interaction with non-playable characters, and Jack's narrative itself. Still, the audio diaries are the blueprint for this parallel narrative of the space in which the player is moving, and, as such, lead to the thematization of the game space (cf. Bal 2009, 200; De Fina 2003, 372). I will call this parallel narrative the 'Rapture narrative'. Accordingly, *BS* is as much a story about Jack as it is a story about space, i.e., about Rapture

The information contained in the diaries is an important pointer to the Rapture narrative – but by leaving much more unsaid than said, and by "scrambling the pieces of a linear story", i.e., presenting them non-chronologically, the player is able to construct an image of what happened to Rapture only gradually (Jenkins 2004, 128). It is very much like solving a murder mystery – the player knows what has happened (Rapture has fallen), but he does not know why and how (ibid.; also Fernández-Vara, 2011).[2] As such, the Rapture narrative is an example of Jenkins' (2004) 'embedded narratives'. These are "prestructured" narratives which are "embedded within the mise-en-scene awaiting discovery" (2004:126) and which, hence, contrast with the "interactivity" (Jenkins 2004, 127) of the 'main' narrative, where the player is more or less in control. The game space in *BS*, then, is not just a 'backdrop' for the events which occur in Jack's storyline, but, instead, constitutes a storyline on its own which is developed mainly through the audio diaries.

The audio diaries also combine with the game space in a more restricted sense. At certain points, the player may encounter 'set pieces' – scenes which stand out, and which are usually accompanied by an audio diary. These audio diaries help the player understand what happened in this particular instance. In one example, the player finds an electrocuted body chained to some pipes, his body connected to a battery. The audio diary the player finds here explains that this person was one of Fontaine's smugglers – he was picked up by Ryan's security services, hooked up to the car battery, and tortured and interrogated to see if he had anything to offer which would help Ryan kill or otherwise incapacitate Fontaine. When it became clear that he would not divulge any useful information, the interrogation turned into an execution.

These types of set pieces do not tie in directly to the larger Rapture narrative. But they are important elements of the game spaces as what Nitsche (2008, 43-45) terms 'evocative narrative elements' (see also Jenkins, 2004; Rouse, 2010; Fernández-Vara, 2011). As with the Rapture narrative, these elements exist independently of the player, and are scattered throughout the game space for the player to discover. Yet they are not stories on their own. It is only with the accompanying audio diary that the narrative potential of these set pieces is unlocked, and a 'mini-story' emerges tied to a particular space. The goal with these evocative narrative elements is to "provide evocative means for the interactor to comprehend the virtual space and the events within it, and generate context and significance in order to make the space and the experience of it more meaningful" (Nitsche 2008, 45). In other words, the game space is imbued with narrative – the game space the player travels through is one where other people have lived, acted, fought, killed, and so on. At the same time, these elements allow the narrative to gain in strength by providing an example of the twisted society Rapture had (and has) become. The player

now knows that Ryan did not shrink from using torture to get on top of Fontaine's smuggling ring – but given the fact that the prisoner, in the audio diary, refused to say anything for fear of Fontaine, this scene is also testament to the fact that Fontaine was not to be trifled with either. Ryan's and Fontaine's characters and personalities, then, are also developed through the 'mini-story' tied to this evocative narrative element. As such, the game space contributes to the narrative by way of local, isolated scenes which give a more detailed sense of the specific ways in which the larger, overarching Rapture narrative played out in its citizens' daily life. This type of 'environmental storytelling' (Rouse 2010), in which the game space is used to enhance the narrative, is typical of games – in fact, Rouse argues that it is "a type of storytelling games do better than any other medium."

THE STORYWORLD: SPACE AND IDEOLOGICAL OPPOSITIONS

The story of Rapture and its slow descent into madness is predominantly a story of contrasting ideologies. This comes to the fore most clearly in *BS2*, although it is also one of the themes of *BS*. This ideological battle was eventually waged with guns and plasmids and led to the fall of Rapture; however, it was also waged by means of spatial appropriation – battle lines were drawn by subtly changing the face of Rapture, with both Lamb and Fontaine steadily subverting Ryan's idea of the perfect society by utilizing space.[3] In fact, the original idea of Rapture itself is conceptualized as an area which is separate from the 'real' world in more than one sense. This section deals with the storyworld of *BS2* and *BS* – how the space in which the events play out, is a vehicle for the different ideologies which are espoused in the games.

Rapture as a concept: portals and verticality

Rapture's location at the bottom of the sea is, of course, not random. Consider the following audio diary, from *BS*:[4]

"To build a city at the bottom of the sea! Insanity. But where else could we be free from the clutching hand of the Parasites? Where else could we build an economy that they would not try to control, a society that they would not try to destroy? It was not impossible to build Rapture at the bottom of the sea. It was impossible to build it anywhere else." (Andrew Ryan, 'Impossible Anywhere Else')

Rapture, both as a physical construct and as an idea, can only work if it is entirely separate from the outside world, according to Ryan. This also explains why nobody can leave Rapture once they are in – to keep both its location a secret and its ideals pure and untainted. Jack, by travelling from the surface world to Rapture, crosses a boundary in more than one sense. It is a journey from the world he knows to an unknown world beneath the sea, not only physically separated from the surface world, but defined by different social, economic and even biological rules. The only way to get from the familiar to the unknown is through the lighthouse at the beginning of the game.

The lighthouse, in connecting the 'world above' to the 'world beneath', functions as a portal in Dannenberg's (2007; 2008) sense. It is a "doorway to another world" and, as such, suggests "escape" (2008, 76) – every aspect of the inside of the lighthouse is geared to this motif of a different world which offers an escape from the corrupted world above. When entering the lighthouse, Jack is confronted with an enormous bust of Ryan above a red banner proclaiming 'No Gods or Kings. Only Man.', which encompasses the whole idea of Rapture – man is the measure of all things and should not answer to anyone except himself. After descending a staircase, Jack reaches the area containing the

bathysphere which he uses to travel to Rapture. Three plaques are mounted on the wall here, inscribed with 'Science', 'Industry' and 'Art' respectively – the three engines of Rapture. According to Ryan, Rapture offered a place for scientists to do unfettered research; for captains of industry to go about their business without being restricted by the government; and for artists to escape censorship. As such, the lighthouse, as a portal, offers the only viable link from the surface world to Rapture; moreover, its design is programmatic – the decorations are a sign of things to come in Ryan's utopia.[5]

Rapture itself was, as stated above, meant to be entirely different from the world above. As its name suggests, it was designed to be a paradise for which a chosen few were selected – they were deemed worthy of contributing to Rapture's growth. In order to accomplish this, a space was carved out which was physically as separate as possible – at the bottom of the sea, an unfamiliar, untouched place where human life should not be possible. This physical, spatial isolation is reflected in Rapture's laws, economics, technology – and even the genetic make-up of its inhabitants (cf. Ryan in progress, 21-24). Laws were kept to a bare minimum to ensure that businesses could flourish unhindered, and the economic system was predicated on total freedom – Rapture's was an extremely capitalist system which has no parallel in modern societies (as Ryan, of course, meant for it to be). The discovery of ADAM and its commercialization in the form of plasmids enabled Rapture's citizens to step beyond the genetic boundaries of human life and take on superhuman abilities. In addition, to ensure that Rapture's buildings could withstand enormous deep-sea pressure, Ryan poured vast amounts of money into a fictional material called Ryanium, which was advanced far beyond the building materials of its time (and, one could argue, of our time); beyond that, Rapture's many automatic doors and turrets are examples of technologies which are far superior to those of the surface world of its time. In that sense, Ryan's (2009, 429) contrast of horizontal and vertical partitions of space is relevant – horizontal partitions divide the world into different subspaces, such as different countries. Vertical partitions correspond to different ontologies – "these ontologies can oppose the world of everyday life to a world of magic, dreams to reality, images to existents". Rapture is vertically separate from the surface world not only from a physical point of view, but also in this sense – more akin to an alternate reality than an isolated part of our own world. Yet over its short-lived history, Rapture became increasingly partitioned in a horizontal sense as well.

Rapture as a battleground of ideas: ideologies and the appropriation of space

Ryan's model of full-on capitalism was predicated largely on the acquisition and development of physical space. The more money one had, the more space one was able to buy, which one then was able to use to make even more money. To put it somewhat tritely, space was power in Ryan's city. As Rapture's space was limited, this arms race led to some creative ideas. Augustus Sinclair, one of the pre-eminent business men of Rapture, used the hollowed-out space beneath the luxury train line of Rapture to build what he termed 'affordable' housing for Rapture's poor (cf. audio diary 'Wrong Side of the Tracks' in *BS2*). No space was left unused if it could be harnessed to turn a profit. This led to a horizontal partition and opposition – high-end stores and apartments contrasted with shantytowns. Hence, the physical space of the 'haves' was entirely separate from that of the 'have-nots', as Ryan meant for it to be – the cream rises to the top, and those who do not work (or cannot find work) lack initiative and do not deserve the rest of Rapture's sympathy or help.

All space in Rapture originally belonged to Ryan – it could be leased or bought from him, but its original form was determined by Ryan and his architects. Since Ryan meant for

Rapture's denizens to primarily do business and research there, space was largely designed to be functional – even Rapture's park, Arcadia, served a practical purpose, as it delivered oxygen to the city's inhabitants. That is not to say that there was no room for artistic expression – Rapture was also meant to be a haven for artists who feared censorship, and was filled with sculptures. However, Ryan's commissioned art was also entirely functional – Rapture is filled with self-serving models of Rapture which glorify its founding, and is dotted with sculptures of nondescript, muscular men (similar to early Greek *kouroi*) with lifted arms, seemingly holding up Rapture – a monument to the men (and women) of Rapture metaphorically holding up Rapture, who, following Ryan's motto 'No Gods or Kings. Only Man', are the lifeblood of the city. There are also many busts of Ryan and models of the so-called 'Great Chain', the metaphor behind Ryan's ideology – if everyone follows their own interest, this allegorical 'chain' guides society in the right direction. This idea is the philosophical justification behind Rapture's dedication to unbounded capitalism. In this sense, even Rapture's art is not free of a practical purpose – it is wholly propagandistic, designed to perpetuate Rapture's doctrine and economic model.

Rapture, then, was carved out as a physical space, but also as an ideological space – a place where unbridled capitalism held sway. Even though Ryan insisted that censorship would not exist in Rapture, this ideology was non-negotiable – there was room for only one type of economic model in Rapture, and anyone who threatened that hegemony would have to deal with Ryan. As such, Rapture was a homogenous space – it was built from Ryan's ideology and it served to maintain, bolster and reproduce that ideology (cf. Lefebvre 1991, 52). There was no room for any opposition, as Ryan's increasing paranoia and his gradual descent into tyranny demonstrate – the moment Ryan felt that his position as Rapture's leader was threatened by Fontaine's rise, he tried to kill him; Lamb's attempts to provide an alternative to Ryan's ideology resulted in her being thrown in jail; and artists who criticized Ryan even mildly were killed without remorse. As such, Rapture itself was predicated on an opposition with the surface world (almost boundless freedom versus increasing governmental and religious control), but, *within* Rapture, differences were neutralized as much as possible – which obviously clashed with the boundless freedom which was the putative rationale behind Rapture's founding.

This paradox, of course, could not last. Dissent crept up everywhere, sprung not only by the socio-economic fault lines between the haves and the have-nots, but also by the exclusive focus on science, knowledge and capital. The neutralization of religion, for example, was circumvented not only by Lamb's 'Rapture Family', but also by Fontaine – he was able to smuggle in many copies of the Bible, which points to the fact that not everyone in Rapture shared Ryan's aversion to religion. In the rest of this section, I want to focus on how these socio-economic and religious fault lines are reflected in the appropriation of the homogenous space of Rapture, and how different locations in *BS* and *BS2* manifest the ideological shifts and oppositions between Ryan, Fontaine and Lamb.

Fontaine used the socio-economic disparities of Rapture to his advantage. He built 'Fontaine's Homes for the Poor', for example, offering food and shelter to the underbelly of Rapture's society. In this way, he could build support against Ryan, who, following his sink-or-swim economic model, did not care about the poor. Fontaine's 'Little Sister's Orphanages', in the same vein, took in Rapture's (girl) orphans. Many children were left parentless due to the increasing availability and use of plasmids, which led to heightened aggressiveness, fights and deaths between Rapture's inhabitants – especially between those who were already depressed or angry due to lack or work and money. These spaces,

of course, did not fit in with Ryan's ideology. They were (ostensibly) used to help people in need; to Ryan, these people should have been left to fend for themselves. These spaces were also quite successful, and cut into Ryan's standing with the citizens of Rapture; conversely, they increased Fontaine's clout with the common people. This schism paved the way for Rapture's civil war – the poor people of Rapture, bent on having the goods and standing which Ryan denied them, were led by Fontaine/Atlas in a revolutionary attack on Ryan and Rapture's bourgeoisie. As such, the Homes and the Orphanages are what Lefebvre (1991, 52) calls 'differential spaces' – these accentuate the differences which homogenous space tends to neutralize. *BioShock*'s differential spaces focus on those who are left behind and neglected by the homogenous space, i.e. Rapture as it was conceptualized by Ryan, and appropriate parts of the homogenous space as their own.

The fragmentation and appropriation of Ryan's space is even more pronounced in *BS2*, when Sofia Lamb enters the fray. Simon Wales' church is one of the most important appropriations here. Simon Wales, along with his brother Daniel, was Rapture's architect – the many leaks in Rapture and the ensuing bad publicity ensured that 'Wales and Wales' could not find any other work in Rapture. Depressed, Simon Wales turned to Lamb's therapy and quickly became one of her most zealous followers. Fanatically devoted to the Rapture Family's religious tenets, he tries to stop Subject Delta from reaching Eleanor. Eventually, Delta makes his way to Wales' base of operations – a maintenance station ('Pumping Station 5') which has been converted into a church. It contains pews, turned towards a pedestal where Wales could preach. Candles are lit everywhere, and this 'chapel' is dominated by a gigantic painting of Eleanor Lamb, angel-like and ringed by light, floating towards heaven while people are frantically trying to touch her. Finally, one of Eleanor's dresses is encased in glass, an important relic of Simon Wales' church. Clearly there has been appropriation here – an entirely functional space, a maintenance station, has been converted into a church for the Rapture Family, a space for religious expression and devotion unique in Rapture. Ryan's homogenous space has been shattered, with chunks being broken off and adjusted to fit Lamb's (and Wales') project. Ryan tried hard to suppress any inkling of religion in Rapture, but once he was gone, the face of Rapture, and its inhabitants, rapidly changed in the opposite direction. Yet even before his death, Ryan was losing control of Rapture and its space – as Dionysus Park, another appropriation of Lamb's, demonstrates.

Dionysus Park was bought from Ryan by Lamb as an art hub. Although Ryan promoted art, it was art on his terms, i.e., art which embodied Rapture's values. Dionysus Park, on the other hand, was meant to be a celebration of "unconscious art", as Ryan derisively terms it (audio diary 'Lamb's Idea of Art', *BS2*) – it was meant to be a refuge for artists to explore their own ideas without having to fear Ryan watching their every move. Ryan, even though he insisted that he would not censor Dionysus Park, had one of his cronies infiltrate Lamb's circle of artists in order to report any miscue which could be grounds for Lamb's arrest and disappearance. Lamb, then, appropriated a part of Rapture as a true artists' paradise, not beholden to Ryan's idea of art but dedicated entirely to artists' freedom to explore their own beliefs and intuitions. Ryan was well aware of this appropriation and attempted to keep it under control. Space in Rapture was not free but had to conform to Ryan's ideology – it was homogenous, and Dionysus Park was considered a threat to that homogeneity. In that sense, Dionysus Park, along with Fontaine's Homes for the Poor and Orphanages, were important steps in the transformation of Rapture – by fragmenting and appropriating homogenous space, Ryan's ideology could be challenged and eventually defeated. Put differently, the battle between

Rapture's different ideologies was also a battle of and for space – space reflects ideology, or, as Lefebvre (1991, 84) argues, spaces are "political" and "strategic" products.

THE NARRATIVE UNIVERSE: *BIOSHOCK INFINITE*, POSSIBLE WORLDS AND METALEPSIS

BSI has been mostly disregarded up to this point. The reason for this is that I want to focus on one very specific part of its space – the narrative universe it creates. The concept of the narrative universe can be defined as

"the idea that reality—now conceived as the sum of the imaginable rather than as the sum of what exists—is a universe composed of a plurality of distinct worlds." … "This universe is structured like a solar system: at the center lies a world commonly known as "the actual world," and this center is surrounded by worlds that are possible but not actual." (Ryan 2006, 644-5).

As Ryan (2006) acknowledges, this is an idea which lies at the heart of quantum physics, where theorists assume that, if the location of a particle is known at a certain time, it "can be anywhere else in the Universe at [a] later time […]. Our particle will simultaneously be both a nanometer away and also a billion light years away in the heart of a star in a distant galaxy" (Cox & Forshaw 2011, 46). 'Simultaneously' refers to the fact that all these possibilities exist in different worlds or ontologies – as such, 'everything that can happen does happen' is one of quantum physics' tropes (and the title of Cox & Forshaw's introduction on its principles).

The possibilities which this model of the universe opens, have intrigued writers and narratologists for a few decades now. Jorge Borges' *Garden of the Forking Paths* (1941) is one of the prime examples – the protagonist is faced with a sequence of choices, presented as a sequence of branching structures. With each choice, he takes one branch while leaving all other branches (and, hence, other possible choices) behind. This leads to another branching structure, where he must choose one option again, and so on. This leads to a world where one branching structure is actualized, and countless others are left unrealized – these latter structures are possible worlds, which more or less resemble the actual world inhabited by the protagonist. McHale (1987) and Eco (1979) have both written about the narratological implications of this 'possible worlds' (henceforth PW) model of narrative, but its main proponent is Marie-Laure Ryan (2006; 2009).[6] The PW model takes into account not only the actual world which the characters of a narrative inhabit, but also all the counterfactual worlds which could have happened but did not.[7] All of these worlds can be opposed to the actual world which characters in a narrative inhabit. In *BSI*, however, this opposition and, hence, the very notion of an 'actual world' is problematized – as such, the concept of the PW model (and its implications) is one of the main drivers of the story.

Elizabeth, the girl whom Booker is charged with saving, is the key to *BSI*'s narrative universe. Through her ability to create 'Tears' in the space-time continuum and travel to parallel realities, she is, as it were, master of the quantum universe – everything which can happen, does happen, and she is able to experience and control it. As stated in the plot outline above, she is able to avoid undesirable outcomes by opening Tears and switching over to parallel worlds where other choices can be or were made, and the outcome can be (or has been) changed. For example, in one of the worlds Booker and Elizabeth travel to, Booker was one of the heroes of the rebellion of the oppressed races against their white oppressors – he had died fighting them, and had become a martyr for the rebellion's cause. This was, of course, the result of different choices which this Booker had made –

he had chosen to join the rebellion in their fight, he had proven himself as a warrior and a leader, he had died fighting against his enemies, and so on. As such, parallel worlds are not just unrealized possibilities or worlds constructed in the characters' mind – in *BSI*, they are an integral part of the narrative itself.

However, the PW model also connects *BSI* to the universe of the first two *BioShock* games (both set in Rapture). Although there seems to be no obvious link between the first two parts of the trilogy and *BSI*, the narrative universe of *BSI* offers a portal to the world of *BS* and *BS2*. Towards the end of the game, Elizabeth leads Booker to the 'Sea of Doors' – a vast sea, filled with lighthouses, all quasi-identical to the lighthouses which led (downwards) to Rapture in *BS* and (upwards) to Columbia in *BSI*. Elizabeth explains that all these lighthouses lead to different realities, all different yet also similar to each other – i.e., that they are portals to different possible worlds. One of these lighthouses leads to the introduction area of *BS*, which the player will recognize immediately if he played the original *BioShock*.

All of the different worlds which lie behind the lighthouses are connected by what Elizabeth calls "constants and variables" – "there's always a lighthouse, always a man, always a city". In other words, in every possible reality, there is always a lighthouse which leads to either Rapture or Columbia, and to either Ryan or Comstock – but these different worlds are not identical, which results in a narrative universe containing all possible worlds of all three *BioShock* games, the events leading up to them, and even beyond them. In some worlds, Ryan constructs Rapture, Jack arrives there, and dies while trying to kill him; in others, Ryan constructs Rapture, Jack arrives there, and kills him; in yet another world, Ryan constructs Rapture, and Jack dies during the plane crash; and so on. In some worlds, Comstock builds Columbia and is able to take Elizabeth from Booker; eventually, she is able to lead Columbia on an attack on the surface world and conquers it – this world is shown in-game. In other worlds, Comstock builds Columbia; is able to take Elizabeth from Booker; and Booker is able to take Elizabeth back. The possibilities are not boundless (hence the "constants"), but their number is so great (the "variables") as to make that somewhat of a moot point. Of course, after Elizabeth is able to kill Booker before he can accept or reject his baptism (and become Father Comstock) at the end of the events in *BSI*, all possible realities in which Columbia is constructed are closed off – if Comstock never lived, he could never have built his city in the sky.

In short, then, we are dealing with a metaleptic narrative (Genette 1980, 234-7; McHale 1987, 119-21; Herman 2009, 120-2; Pier 2009). Booker and Elizabeth do not stay in 'their' world and 'their' narrative, but travel to many different worlds, containing many different narratives, and, hence, are able to transgress the "ontological boundaries" between these worlds (Herman 2009, 120) – with Elizabeth functioning as the conduit between these different worlds. Eventually, they enter the ontological purgatory of the Sea of Doors, which supersedes all the different narrative levels and grants entry to all the different narrative worlds. The narrative of *BSI* is, then, not limited to one narrative world (as opposed to the narrative of *BS*, for instance, which is limited to the narrative of one version of Rapture) – the story of *BSI* gradually comes to include different narrative worlds and many different Columbias, until, at the end, it comes to include the Sea of Doors, which leads to every different Columbia, and every different Rapture too. *BSI* is as much a story about Booker, Elizabeth and Columbia (and even Rapture) as it is a story about the stories about Booker, Elizabeth and Columbia (and even Rapture). The 'Infinite' in *BioShock: Infinite*, then, refers to its narrative universe – for all intents and

purposes, there is an infinite number of possible worlds which Elizabeth can travel to, and an infinite number of lighthouses which grant access to them in the Sea of Doors.

CONCLUSIONS

In this paper, I discussed the *BioShock* trilogy of games from a narratological point of view. My starting point was the experiential category of space, which functions on (at least) three levels of the narrative – the storyline or the plot, the storyworld, and the narrative universe. On the level of the storyline, *BioShock*'s and *BioShock 2*'s narrative is as much about the protagonist's narrative as it is about the space which he is moving through. Through the use of audio diaries, which record eyewitness accounts of and reactions to major events which precede the storyline of the games themselves, the player is able to piece together what happened to the underwater world of Rapture. These audio diaries also combine with and explain set pieces in the game space, which add further background to the larger Rapture narrative which is being constructed simultaneously.
On the level of the storyworld, i.e. the world in which the events of the storyline occur, I argued that Rapture's space was used as a vehicle for the ideologies of its different would-be leaders. From its initial homogenized space, dominated by Andrew Ryan's idea of ultra-libertarian capitalism, it came to be fragmented and appropriated by different factions, both in a socio-economic and a religious sense.

On the level of the narrative universe, finally, I focused on *BioShock: Infinite*. The narrative universe usually contains the actual world in which events take place and all counterfactual worlds, which encompass those events which could have taken place but did not. However, in *BioShock: Infinite*, these counterfactual worlds can be and are fully realized due to Tears, i.e., ruptures in the space-time continuum. These Tears enable its users to travel between parallel realities, and, hence, to explore the narrative universe in full. As such, the narrative universe as a whole is an important part of the *BioShock: Infinite* storyline, and the game is, for a large part, a metanarrative story about the story.

Although it has often been neglected in favor of temporality, I would argue that spatiality has a large role to play in explaining many aspects of narratives. For games, which have been argued to be particularly spatial in their design and stories (Aarseth 2001; Jenkins 2004), space is even more important – the developers, guiding their players through carefully orchestrated levels, can employ spaces which help to interpret, reflect, or even construct the narrative.

It should be noted that space has been a topic of interest in game studies for quite some time. But most of these approaches focus on limited and isolated aspects of the game space. For example, Nitsche focuses on the 'spatial structure' of game spaces (2008, 171) – whether the game space is a maze or an arena, for instance. Aarseth (2001) aims to provide a classification of games through their spatial representation and perspective. Ryan (2015) discusses the emotional aspects of game spaces – how locations can be repositories of memories, for instance, or can reflect the player's identity – or the strategic potential of them – maps of the playing area, for instance, can be used by the player to plan his movements in advance. These all focus, more or less, on the storyworld, and how it is represented. Fernández-Vara (2011), Jenkins (2004) and Rouse (2010) focus more on the storyline – how space can be used to tell a story.

All of these approaches are, of course, valuable, and have informed my own analysis here to a greater or lesser extent. And it may be that, as Ryan argues (2015), space is so broad of a category that it defies a unitary approach. However, the three-way distinction

between storyline, storyworld and narrative universe presented here provides, I think, a fruitful and systematic way of looking at the role of space in game narratives. This 'ecological' approach to narrative, and space in narrative specifically, breaks up a complicated and multi-faceted category like space into more manageable aspects which can be analyzed on their own, but are also brought together in an overarching approach which explains how space can be used to tell and inform stories in games.

This paper, then, has to be seen as an addition to the growing body of work which argues that space is more than a backdrop or setting against which the game is played, or a design which guides or constrains the player in his movements. Instead, space is a category which is tied up inextricably with narrative. There are several aspects of narrative which are connected to the game space and which I have not discussed here. For instance, during a panel discussion at PAX East in 2011, several of the *BioShock* trilogy's lead developers discussed how they used space to develop characters – Nate Wells, Irrational Games' art director, discussed how they used a character's "personal space" (for example, his or her living room) to provide the player with clues as to that character's preferences or personality.[8] This is a possible avenue for future research, and suggests that game space is brimming with narrative potential, of which we, as analysts, have only barely started to scratch the surface.

NOTES

1 More information on the events, characters, abilities and objects described in this section can be found on the *BioShock* wiki: http://bioshock.wikia.com/wiki/BioShock_Wiki. It is a community-driven repository of everything related to the *BioShock* universe, and I am very much indebted to its contributors.

2 Compare with De Fina's findings on immigrant stories, which usually center on the question "How did you arrive here?" (2003, 373) – in the case of *BS*, the question is 'How did *Rapture* arrive here?'

3 See Bridgeman (2007, 61-2) on how space can reflect changing relationships between fictional characters.

4 All audio diaries can be found in full on the *BioShock* wiki audio diaries hub: http://bioshock.wikia.com/wiki/Audio_Diary.

5 For more on the lighthouse, cf. the section on the narrative universe *infra*.

6 See Herman (2009, 120) for further references.

7 It also takes "the counterfactual worlds constructed by characters as beliefs, wishes, fears, speculations, hypothetical thinking, dreams, and fantasies" into account (Ryan 2009, 422), but this would lead us too far.

8 See https://www.youtube.com/watch?v=DYJEQ7JCOyA, from 37m22s onwards (accessed the 12th of May, 2016).

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