The Ambiguity of Ludonarrative Dissonance: 
the Transhumanist Aspect of Agency in the BioShock

Abstract
This article addresses the ambiguity of ludonarrative dissonance. It is an attempt to reflect on the permissibility of an interpretation of this phenomenon other than the negative one, still derived from its first conceptualisation proposed by Clint Hocking, who critiqued BioShock in this context. In this text, the case analysed will be the same game, but I will focus not on Objectivist philosophy itself, but on the transhumanist aspect of agency embedded in its context. I will point out how it is supported in the mechanical layer and how it is simultaneously negated in the narrative layer, and I will try to show that the effect of this dissonance is not necessarily to lower the quality of the game, but to give it a new critical dimension. In this way, this article aims to show how digital game developers are able to problematise complex issues by exploiting the ludonarrative potential of the medium.

Keywords: agency, ludonarrative dissonance, transhumanism, Ayn Rand’s Objectivism, BioShock

Introduction
The game BioShock is a first-person shooter with RPG and survival horror elements. It was developed by Ken Levine of 2K Boston (now Irrational Games) and released by 2K Games in 2007 for PC and Xbox 360, and a year later also for PlayStation 3. It is the first in a series of games. Subsequent parts are 2010’s BioShock 2 and 2013’s BioShock Infinite. In preparing this article, I played the 2016 Remastered version, released on PC.
The game tells the story of Jack, a survivor of a plane crash who, in the 1960s, in the middle of the ocean, discovers the entrance to the underwater city of Rapture. It turns out to be a metropolis that business magnate Jack Ryan began building in 1946. Rapture was designed to be completely self-sufficient, with electricity, water purification, defence systems and food production. Ryan’s goal was to create a city where the economy, science and the arts could thrive unhindered by government or religion. However, the player arrives in a now collapsed metropolis, which is overrun by mutated people who murder each other. During the course of the game, we discover the events that led to this state of affairs.

The game is the subject of much analysis because of its philosophical background. It is based on the philosophy of Ayn Rand, an American philosopher and writer, born in 1905 in Russia as Alissa Zinovievna Rosenbaum. Her philosophical doctrine of Objectivism is summarised by Jakub Krogulec: Rand’s philosophical doctrine relies on four main principles: reality as a metaphysical foundation, reason as an epistemological base, self-interest as a leading ethical notion and capitalism as the primary political idea1.

The developers of the BioShock were particularly inspired by two of Rand’s books – these are The Fountainhead from 1943 and Atlas Shrugged from 19572. As Celina Strzelecka notes: „almost every character, motif, behaviour, spoken word and even computer graphics allude to” Rand’s literary work3. As a result of this interesting background, but also because BioShock is simply a great, critically acclaimed game, the production has received numerous studies in the field of game studies, including a very important article introducing the category of ludonarrative dissonance.

**Ludonarrative dissonance**

I am referring to the 2007 text by well-known game developer Clint Hocking’s *Ludonarrative Dissonance in BioShock*4. In it, the author criticised the discrepancy between the story and the mechanics of the BioShock game. He argued that there is a huge dissonance between what this production is as a game and what it is as a story, making it unable to be simultaneously satisfying in both layers. The dissonance lies in the fact that BioShock offers the player two conflicting contracts. The ludic contract can be formulated as follows: „seek power and you will progress”. This contract therefore assumes that the player will do what is best for him or herself, without regard for others. This is entirely in keeping with the standard attitude of the player in single-player games, where most characters are hostile, but it is also in keeping with Randian objectivity. That is to say, as Hocking argues, that the developers

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1 Jakub Krogulec, „Popular culture’s take on modern philosophy: Video game Bioshock as a criticism of Ayn Rand’s objectivism”, *Literatura i Kultura Popularna* XIX (2013), 80.
are trying to reconcile the mechanical and story layers of the game in order to provide the experience of adopting a particular social philosophy. Unfortunately, they fail to realise this aspect, when we consider the narrative contract, which is contained in the formulation: „help Atlas and you will progress”5. A caveat is worth making at this point. Reading Hocking’s text may present some difficulties in terms of clearly separating the layers of game structure under discussion. The distinction between premise and story, proposed by Tracy Fullerton and Chris Swain as part of the FDD analytical structure they developed, is useful in this context. The premise is the basic story of the game world around which the rest of the game is constructed. The story is the plot of the game, and therefore the actual narrative unfolding in the course of it and within the premise6. In this context, Hocking’s claim should be formulated as follows: game developers try to reconcile the game’s mechanics and story with its premise (a vision constructed on objectivist assumptions), but in terms of the game’s story (the narrative contract) they fail.

The author points out three problems with reconciling the two contracts. First, helping someone is compatible with the narrative contract, but contrary to Randian rational self-interest and the mechanics that support it. Secondly, helping Atlas means opposing Ryan, who embodies the Objectivist philosophy that is the guiding principle of the mechanics. Thirdly, despite both of the above problems, the plot makes it so that the player does not get to choose a side in the conflict, he has to support Atlas against Ryan, even though at this point he is misappropriating the Objectivist philosophy realised through the mechanics. Hocking notes that the mechanics of the game provide the opportunity to accept or reject the principles of Objectivism. This includes encounters with the Little Sisters, which the player can save or sacrifice in order to gain more of the desired substance, which I will describe in more detail later in the article. The game’s plot, however, nullifies this choice by forcing the player to take a particular stance7.

The phenomenon thus described, Hocking calls ludonarrative dissonance, which he judges strongly negatively, as shattering the coherence of the game and even making a mockery of the player who has suspended disbelief and believed in the premise conveyed by the game. Despite this, he points out that BioShock is a game with a great deal of merit, and that the problem he describes in the game’s structure is quite complex and will probably be imperceptible or at least negligible to the layman. However, he argues that video games have not lived up to their masterpiece, a production that would be to the medium what Citizen Kane is to cinema, and BioShock seems very close to reaching that level. Its in-depth critique is therefore intended to serve the achievement of excellence by its successors. It also draws attention to the limitations of the conceptual apparatus for games and the fact that in describing a new phenomenon, it moves in a hazy reality8.

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5 Ibidem, 256-257.
6 Tracy Fullerton, Game Design Workshok: A Playcentric Approach to Creating Innovative Games, (Boca Raton: CRC Press, 2014), 105-115.
7 Clint Hocking, „Ludonarrative Dissonance in Bioshock”, 257.
8 Ibidem, 257-259.
In retrospect, it can be judged that Hocking’s conceptualisation was definitely successful, and the notion of ludonarrative dissonance is widely used wherever a game’s plot is incompatible with its mechanics, which can manifest itself in a variety of ways. I agree with Hocking’s core claim that *BioShock* is, at the narrative level, a critique of the Objectivist philosophy and, at the mechanical level, largely a praise of that philosophy. I do not, therefore, question the existence of what the author has aptly called ludonarrative dissonance in the game. The conceptualisation of this phenomenon is a very important moment in the history of game studies, as it represents one of the first elements of knowledge about digital games, constructed on the basis of the recognition of the necessity of a dynamic relationship between the different layers of this extremely complex medium. It is therefore the point at which the limitations underpinning the dispute between ludologists and narrativists are actually raised and the focus is on the study of the properties of the digital game as a whole.

However, I don’t think, as Hocking suggests, that ludonarrative dissonance is necessarily something negative and diminishes the quality of a game, and that a kind of holy grail of game design is to be ludonarrative coherence. It is true that ludonarrative dissonance often has a negative impact on the player experience. This happens, for example, when a particular mechanic is illogical and unbelievable from the point of view of the storyline, or directly contradicts it. A well-known example of this is in *The Witcher 3*, where the main character Geralt is cast ashore on an island as a castaway after the ship he was travelling on crashes, but when he uses the mechanic of summoning a mount by whistling, the horse appears on the beach as if nothing had happened. Such dissonances can be described, following Piotr Kubiński, as incidental emersion factors, causing technical disillusionment of the game. They are often ridiculed by the satirical group Viva La Dirt, popular among gamers, which creates videos published on YouTube showing situations such as a guard setting off an alarm, who has just been silently eliminated by the player, but having noticed him for a split second beforehand. But dissonances can also be positive, for example when they become a stimulus for moral reflection. This happens when the player acts in a certain way, natural from the point of view of the game mechanics, and the story context provides a kind of critique of this behaviour. In this way, the digital game realises its potential by simulating real life practice. Often, after all, our behaviour is diametrically opposed to our declared and sometimes even professed value system. I believe that this kind of ludonarrative dissonance was already present in the *BioShock* described by Hocking, as I will try to demonstrate.

**Agency and transhumanism**

Two categories should be introduced beforehand. The first of these, the category of agency, refers to the broad sense of influence that a player can have in the game world. Jannet Murray defines this concept as follows: „the satisfying power to take meaningful action and see the results

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10 Viva La Dirt channel, https://www.youtube.com/watch?v=r_ydVCyN-hY.
of our decisions and choices”\textsuperscript{11}. Agency is positively valorised; it is widely believed that the more a player can do in a game, the more immersive it is. Agency in a given game can be realised in many different ways; designers can provide seemingly insignificant gameplay mechanics, such as turning on the tap or kicking a ball lying in the street, but also seemingly unlimited ways of completing a quest or carrying out a storyline. Marcin Chojnacki divides the types of agency at a basic level, distinguishing three fundamental levels, of which two are particularly important in the case under analysis: the plane of narration and the plane of simulation. The simulation plane is the level that deals with “all the mechanisms and media properties that determine the course of player-simulation interaction. It is noteworthy that it is always the first area for learning, testing and enforcing the basic mechanics of agency”\textsuperscript{12}. Agency on the narrative level in BioShock does not generally function, according to the Hocking study cited above.

The second category is transhumanism, which is a contemporary philosophical trend centred around the idea of improving humans through the use of science and technology. Although the potential benefit of eliminating biological limitations is obvious, transhumanism raises a number of concerns of various kinds, e.g. relating to possible dangers or violations of the integrity of the human being, however differently it is understood. The category of player’s agency fits perfectly in this context, as transhumanism is nothing other than the pursuit of a continuous expansion of the field of human possibilities, and therefore de facto agency. In BioShock, agency is realised by providing the player with various ways of solving a given problem thanks to technological or – above all – biotechnological enhancements, such as winning a fight thanks to plasmid and tonic mechanics, which allow the player to set fire to an enemy, freeze him, throw a can of food at him, use remote-controlled drones against him, shoot him thanks to artificially enhanced shooting skills, or launch a surprise attack, and so on. The mechanics undoubtedly encourage the use of such enhancements, providing the player with new, often very attractive, opportunities to interact with the game world, and sometimes outright forcing the player to use them. We know that – in the light of the concept of procedural rhetoric – computer games „can convey content through the system of rules used by the player”\textsuperscript{13}. As such, this impact of the mechanics should be interpreted as a deliberate effort to promote a particular stance, in this case transhumanist. Moreover, this complexity provided by the game mechanics is undoubtedly one of BioShock’s greatest strengths.

Due to the linearity of the game’s storyline, it is not possible to consider it in terms of agency. However, on the assumption outlined above that the agency realised with biotechnological enhancements is a practical reflection of the theoretical assumptions of transhumanism, by following its representation in the narrative layer of the game it is possible to confirm or negate the existence of ludonarrative dissonance in this regard. The presentation of transhumanism

\textsuperscript{12} Marcin Chojnacki, \textit{Estetyka sprawczości w grach wideo}, (Łódź: Wydawnictwo Uniwersytetu Łódzkiego, 2022), 144.
\textsuperscript{13} Marcin Petrowicz, „Ludo-narratywizm, czyli proceduralizm Bogosta na tle sporu ludologii z narratologią”, \textit{Replay. The Polish Journal of Game Studies} 1 (2014), 89.
in *BioShock’s* narrative layer, although somewhat overshadowed by Objectivism, nevertheless seems clearly negative.

**Transhumanism in BioShock**

Most of the texts on the philosophical significance of the *BioShock* game focus primarily on the relationship with Ayn Rand’s views and the problematic of the possibility of utopia. The other philosophical context of the game, transhumanism, is much less well recognised. One exception to this is the work of Simon Ledder, in which the author describes the transhumanist themes of *BioShock* in an ethical context. What is lacking in this text, however, is the embedding of transhumanist issues in the context of Rand’s philosophy, except for some minor comments. Meanwhile, this very connection is a key element of the game under discussion.

Transhumanist enhancements in BioShock come in the form of genetic engineering, the rapid development of which took place in Rapture as a result of Dr Brigid Tenenbaum discovering a new species of sea snail and extracting stem cells from them to genetically modify humans. As a result, two substances were developed. The first, ADAM, is a mutagen on which an industry has been based to produce agents that offer a variety of possibilities, from curing baldness to regenerating damaged organs to supernatural abilities such as telekinesis. These agents are divided into two types: passive, called tonics, which permanently modify the user, and active, called plasmids, which are a type of weapon in the game. The second substance, EVE, is a kind of fuel for plasmids, and at the level of game mechanics resembles mana from role-playing games. Plasmids and tonics are essentially necessary for completing the game. The first ones are, for example, *Telekinesis*, allowing the player to move objects without touching them, or *Incinerate!*, allowing objects or enemies to be set on fire. The second ones are, for example, the *Booze Hound*, making drinking alcohol regenerate EVE’s level, or *Natural Camouflage*, making the player invisible.

It is worth mentioning here that the very implementation of such enhancements in digital games is quite common, to point to such productions as the cyberpunk series *Deus Ex*, where the protagonist can be modified through special implants, or the *Witcher* series of games, where the title character undergoes mutations that give new abilities. However, setting these enhancements in the context of Objectivist philosophy is what makes BioShock unique. Crucial to the overall functioning of this transhumanist layer of the game are the anthropological, social and economic aspects, stemming directly from Ayn Rand’s philosophy.

**Anthropological aspects of genetic enhancements in BioShock**

The anthropological aspect is revealed primarily in the accepted understanding of the variability of human nature. There are two fundamental views on this subject. In the first, the

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static one, it is assumed that man is a finite being. This thinking characterises, for example, those religions which recognise that man was created by God. This is quite the opposite approach to transhumanism, in which human beings can transform themselves with the help of technology. This coincides, for example, with Nietzschean philosophy, in which man is a rope stretched between animal and Superman, and whose influence can be seen in Ayn Rand’s anthropological conception. The world depicted in BioShock is based on just such thinking. The inhabitants of Rapture are encouraged to bring their own evolution under control by creating plasmids. Evolve Today – this is the slogan we encounter on posters advertising plasmids.

The philosophy of Objectivism also comes into play where humanity becomes a moral issue. Well, one of the more controversial elements of Ayn Rand’s philosophy is the establishment of egoism as the most appropriate attitude of the individual. In an extreme development, this can lead to treating human beings as a means to a given end. This is portrayed extremely eloquently in the game in the form of the Little Sisters. To increase the production of ADAM, Dr Brigid Tenenbaum developed a procedure to implant sea slugs into the stomachs of human carriers. These became little girls who were gathered – initially in secret – at the Little Sisters Orphanage, founded by Frank Fontaine, which in fact acted as an ADAM factory. The game’s creators have created a particularly eerie impression, as the Little Sisters still behave like children – playing, laughing, singing. Over time, they have also been adapted to extract Adam from the bodies of the fallen during the war that broke out in Rapture. Accompanying them in this work are the Big Daddies: created through genetic modification, the Sisters’ heavily armoured bodyguards and also the most powerful opponents in the game. Both character types are some of the most recognisable elements of the game. They provide the stimulus to reflect on the possible threat posed by the technological enhancement of humans. Won’t it become the case that, under certain circumstances, it is not technology that serves human development, but the other way around?

The game mechanics allow the player to give way to this issue. The character he controls has a plasmid, allowing him to cleanse the Little Sisters of their mutations and restore them to their normal form. The alternative is to kill them. The latter is more profitable, as it gives more ADAM.

**Economic aspects of genetic enhancements in BioShock**

Rapture was strictly laissez-faire in nature, which is fully in line with Ayn Rand’s philosophy. This led to a huge boom in commerce during the city’s heyday. The majority of the city’s most important residents ran extensive businesses. The lack of any control over business activity led to the rise of Frank Fontaine’s business. This talented conman and seasoned criminal, created a smuggling empire under the guise of the fishing industry. Indeed, it was he who enabled the development of genetic engineering in Rapture. When Dr Tenenbaum sought a sponsor to fund her research, she was ridiculed. Only Fontaine believed in the new discovery, and he agreed to fund the research on the condition that he would receive full rights to future profits from the new technology.
The availability of transhumanist technology in a distribution devoid of any control is credibly conveyed in the game mechanics. The main means of obtaining plasmids, tonics and EVE is by purchasing them from vending machines. Other resources, such as ammunition or photographic film, are also obtained in this way. While games often feature traders, the use of unsupervised trading in BioShock is important in that it not only emphasises the uncontrolled availability of genetic enhancements, but also corresponds to actual trends already evident in an increasing number of branches of trade.

The lack of any regulation of the market or reflection on the far-reaching effects of the technology quickly led to the city’s economy becoming completely dependent on the raw material needed to produce plasmids, ADAM. When the civil war broke out and the scarcity of the substance became critical, all moral brakes were let go: the Little Sisters were modified physically and mentally prepared to collect ADAM from now on also from the bodies of the fallen. To increase the Little Sisters’ numbers, they also began to kidnap children from their parents. To offset the public’s disgust, Rayn used the city’s superbly developed advertising industry, previously a powerful support for trade, for propaganda purposes. Toy dolls depicting the Little Sisters began to be produced, and their images found their way onto vending machines.

Social aspects of genetic enhancements in BioShock

The social aspects of transhumanism in BioShock illustrate the classic clash between utopia and reality, in which problems arise from a system that does not count with reality and become apparent primarily in two ways. Firstly, the basing of the Rapture system on the philosophy of Objectivism from the very beginning of the metropolis led to a social split and consequent conflict. The city’s population consisted of migrants from all over the world, whom Ryan considered to be the best examples of humanity. However, his plans did not take into account the creation of jobs for construction workers, who became largely useless once the underwater construction was completed. Many were left unemployed in leaky, overcrowded temporary accommodation. Ryan and the Central Council, which he led, paid no attention to the destitute and ignored the problem, assuming, in line with the Objectivist philosophy, that they would manage to find their own way to prosperity. Dr Sophie Lamb, a psychiatrist who professed an altruistic morality, tried to help these people. Although she gained many supporters, her ideals stood in stark contrast to those professed by Ryan. This led to the first conflict in Rapture, part of a sequence of events leading to the subsequent Civil War. Its outbreak meant that new genetic technology, rather than being used for human evolution, was used as a weapon.

Secondly, the primacy of absolute individual freedom has led to a complete ignoring of possible social problems such as addiction. In the game, this problem is highlighted by the ubiquity of cigarettes and bottles of alcohol that the player can find. The lack of any prevention against addiction and the free access to the fruits of the new technology led to the rapid onset of the problem of mass ADAM addiction. Its abuse led to uncontrollable mutations that turned people into Splicers – the main opponents in the game.
Conclusion

It is therefore clear that the transhumanist enhancements, as positive as they may be from a game mechanics point of view, have been strongly criticised in the narrative layer. Focusing on slightly different aspects than Hocking, I also pointed out the contradiction that exists between the mechanical layer and the narrative layer in *BioShock*, but I don’t get the impression that the game is mocking the player. Rather, I think that what we have here is a situation where the player can use ever newer mechanics that develop their abilities, based on the transhumanist biotechnology developed thanks to Objectivism. In the narrative layer, however, he can simultaneously observe what this development has led to. Thus, the game takes on a deeper critical dimension, in which the narrative becomes a commentary on the player’s actions, and by reflecting on this commentary, the player can fully enjoy the game, not just having fun, but becoming a more conscious human being. This is where ludonarrative dissonance becomes fully coherent with the concept of which it was a variation, namely cognitive dissonance, which, according to its original meaning, operates in two phases. As Leon Festinger wrote: “I. The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance. II. When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance.” Hocking thus seems to have stopped at the first phase of the unpleasant experience of cognitive dissonance, ignoring its cognitive potential. Even in this reduced sense, the category he proposed still did an excellent job in describing actual functioning design problems, as they are probably the cause of most ludonarrative dissonances. However, enriching the understanding of this concept with a positive dimension can help digital game developers and researchers to see new possibilities of expression in this wonderfully versatile medium. After all, the constant ludonarrative tension, i.e. the dynamic relationship occurring between the mechanics and narrative of a digital game, is one of its fundamental features, being at the same time the ground of many design or research difficulties related to it, as well as a potentially unlimited treasure trove of possibilities for artistic creation. I think that an interesting direction for further research is to determine the scope of possible realisations of ludonarrative dissonance in its extended meaning.

Literature and references


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Krogulec Jakub, „Popular culture’s take on modern philosophy: Video game Bioshock as a criticism of Ayn Rand’s objectivism”, *Literatura i Kultura Popularna* XIX (2013), s. 79-91.


Viva La Dirt channel, https://www.youtube.com/watch?v=r_vdVCyN-hY.