A Project entitled

**Video Game Diegesis and Ethics of Artificial Intelligence in *Nier: Automata***

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**Declaration**

I, YEUNG Ka Long , declare that this research report represents my own work under the supervision of Dr. CLAPP, Jeffrey Michael, and that it has not been submitted previously for examination to any tertiary institution

Signed

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**Abstract**

Nier: Automata is unique piece of entertainment media that brings about a discussion for AI ethics. It makes use of narrative elements in its diegesis to outline issues of AI personhood and the ethical concerns that entail, and blends it with non-diegetic gameplay which dissociates the player from the player characters. This magnifies the player presence in the game to a diegetic level. With the player as part of the game's diegesis, the game creates a procedural rhetoric which advocates that AI should be made accountable to humans to achieve equitable use of AI through its series of diegetic and non-diegetic game play.

## Introducing *Nier: Automata*

In 2017, three video game mega-hits of the action genre, including *The Legend of Zelda: Breath of the Wild* (Nintendo, 2017), *Horizon: Zero Dawn* (Guerilla Games, 2017) and *Nier: Automata* (Platinum Games, 2017), were released and they all coincidentally featured AI beings. In most fictional worlds, AI is characteristically depicted as menaces or as tools. HAL from *2001: A Space Odyssey* (Clarke, 1968) and Terminator androids from *Terminator* (Cameron et al, 2004), for example, are well known for both their lethal nature and as autonomous tools designed for specific goals, and the three games also adopted similar approaches. Among the three games, *Nier: Automata's* portrayal emerges as a unique experience, not only because the enemies in the game are AI beings like the other two, but also because of how the player is involved in the diegesis of the game.

*Nier: Automata* (created by *Platinum Games,* directed by *Yoko Taro,* and published by Square Enix. *'Nier'* for convenience in this essay) is an Action Role-playing Game (ARPG) set in a post-apocalyptic future where the Earth is populated by inorganic AI beings. The player assumes the roles of three battle Androids in the 'Yorha' paramilitary force and fights against Machine Lifeforms, which is an army of AI weapons created by an extraterrestrial threat to the Earth, simply called the Aliens. Critically acclaimed, *Nier* have been greeted with awards such as 'Game of the Year', 'Best Storytelling' (Gaito, 2018), and 'Best Game Design' (NAVGTR, 2018) by video game media and journalists.

*Nier*'s narrative can be divided into 3 main compartments with 5 canonical endings and 21 what is known as 'joke/alternate endings', each assigned with a letter from the English alphabet. The goal of this 17-chapter game is to reach Ending E, which is the only ending with a 4-ending prerequisite for it to be unlocked. The three player characters: 2B, 9S, and A2 are androids specifically made for 'Yorha' with the order to exterminate Aliens and their Machine Lifeforms. AI beings in *Nier* can be categorized into 2 types or 4 factions. Androids and Machine Lifeforms are created by humans and aliens respectively and they serve as the basis for AI beings. They can be divided into smaller sub-groups: regular/Yorha Androids and hostile/pacifist Machine Lifeforms. As all three of the player characters are affiliated with Yorha, the two shall be considered synonymic in the following interpretation.

Amongst the blade-dancing lies a fiction about AI ethics as *Nier* attempts to put forth a

discussion of what kind of control should be placed upon AI. The game does so not only with its narrative played by an all-AI cast but also with gameplay. While fully autonomous and human-like AI entities such as ones featured in *Nier* are still far from being successful in reality, there are real-life concerns about AI ethics such as AI personhood and accountability, both of which are discussed in *Nier*. Depictions of AI acting as agents of death and destruction, a prevalent portrayal that is not exclusive to video games, stems from AI ethics which concerns how humans should treat AI when an AI-dependent human society comes into existence.

*Figure 1. Nier: Automata is a science fiction set in a post-apocalyptic future with an all-AI cast.*

Therefore, it begs the question of how *Nier* has managed to create a fiction that made the game as famous as it is in its respective genre. This essay aims to explore how *Nier*, specifically as a video game, has created a rhetoric that warns players of the ethical risks of AI development while advocating that AI should be made accountable to humans to

make its development ethical. Based on existing debates, discussions, researches, and philosophies in relation to AI and AI ethics, this essay attempts to analyze the authorship of this rhetoric through the deployment of analytical models including video game diegesis and procedural rhetoric.

## Game Studies, Rules, and Fiction

### What are video games?

The rhetoric of *Nier* is specific to its genre as a video game as visual and/or audio cues are not the sole rhetorical devices in the medium, unlike literature and movies. Video games are interactive by nature and any meaningful interpretation must be preceded by the act of play. To understand *Nier* as a video game, game studies provide a general basis for investigation. A variety of definitions for 'games' (as opposed to video games as a sub-genre of games) that have been raised by different scholars are influenced by the classical game model, which can be summarized as follows:

"A game is a rule-based formal system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable." (Juul, 2005, p.36)

And to define rules, Lantz and Zimmerman (1999) claim that 'rules are the formal structure of a game, the fixed set of abstract guidelines that defines the functioning of

game-system'. While these definitions are meant to conform to games of differing genre and are therefore unfit to describe fully what digital games are, it provides an overview of their general structure, and *Nier*, as a gamic system, can also be dissected using this definition.

1. Rule: The player progresses through sets of linear main quests and optional side quests by using attack moves on hostile entities. Defeating enemies awards experience points, items and currency which can be used to upgrade the characters. Enemies are strengthened as the game progresses. The player needs to learn the animated move sets of player characters and enemies to engage effectively.
2. Outcome: Progression to the next sets of stages.
3. Value: Reaching one of the endings.
4. Effort: Traversing and exploring in game world, participating in combat, repeating certain sections of the game to gain additional experience points and loot ('grinding')
5. Attachment: Able to continue the narrative.
6. Negotiable Consequences: Game streaming and speed-running can generate income.

Video games are inherently algorithmic and digital, traits that enable greater flexibility in shaping and enforcing rules. The lack of physical confinements also means game creators can conjoin an indefinite number of algorithmic systems that intertwine and create a digital space within which the act of play can be performed. Bogost (2008)

refers to this as the 'possibility space'. The possibility space dictates the range of practicable actions to be taken by a player. In video games, this extends beyond the interactive game world in which the player characters exist to all the actionable phases of the game, including ones that visualize game states. For example, the possibility space in *Grand Theft Auto III* (DMA Design, 2001) denotes not only the fictional Liberty City but also the map menu that appears when the player presses the pause button.

**Fiction Versus Rules**

Rules alone, however, do not bespeak video games in their entirety. They are also a form of cultural object (Galloway, 2006) that has seen massive amounts of innovation – especially the ability to create believable, fictional spaces. With modern hardware, we can create worlds in the digital space on scales hitherto undreamt of – With *Nier*'s graphics, dialogues, cutscenes, and algorithms, its game size amounts to just shy of 50 gigabytes, which is more than 15,000 times larger than *Super Metroid's* (Nintendo, 1994) basic text-based exposition and low-resolution graphics. Video games' data sizes have grown exponentially, and so does the ability to create fiction in this digital media.


*Figure 2. Super Metroid's ability to create a coherent world is limited by the technology at the time.*


*Figure 3. Nier is more capable at making better use of the format of video game to create fiction, both in terms of narrative and gameplay.*

The creation of fiction is central to video games as a form of entertainment. Like movies, they blend individual cultural objects such as music and visual arts to create coherent fictional worlds, and they too comprise a number of genres. There are games that aim to recreate historical periods such as *Kingdom Come: Deliverance* (Warhorse Studios, 2018), games that are based off fantasy such as *Devil May Cry* (Capcom, 2001), and games that explores the depths of science like *Steins; Gate* (5pb. & Nitroplus, 2009). Fiction in video games extends beyond what the player can read in the game. Graphics, audio design, machinima, game title, and even rules and player actions make up parts of fiction (Juul, 2005, p.134). *Nier*, in this case, is indubiously a science fiction.

Unlike movies, in addition to narrative categories, video games are also classified according to their styles of interaction with the audience. For example in Sci-Fi, *Steins; Gate* is a text adventure with zero action element, while *Portal* (Valve, 2007) is a 3D

puzzle platformer which features a lot of athletic moments. *Nier* stands somewhere in between the two due to its incorporation of text adventure and role-play elements into its core action gameplay. Hence, the superimposition of categories creates a much larger number of genres in video games than in other forms of fiction, and narrative is always upheld by a set of rules designated by creators in video games.

*Figure 4. Nier: Automata is a Sci-Fi Action Role-Playing Game where the player engages enemies in close-quarter battles.*

Video game scholars have argued whether video games are ‘rules’ or ‘fiction’, an argument which ran in parallel to the clash between ludology and narratology (Juul, 2005). Ludology (Frasca, 1999) establishes game studies as a separate academic field from narratology and focuses on the form of game, while narratology, a classical study of narrative and its structure, suggests narrative is critical to player experience. Juul’s (1998) claim of fiction being unimportant in games, a ludologist stance, was refuted by Apperley (2006) and, curiously, himself (2005) by suggesting that ludology and

narratology do not have to be mutually exclusive, and that video games can be conceptualized as both rules and fiction to explain more comprehensibly what video games are. Fictional worlds can be understood as tools that help the player contextualize the abstract, algorithmic rules of a game. Fiction, on the other hand, cues rules that complement the overall presentation of the game narrative (Juul, 2004).

This essay will proceed to examine *Nier* following Juul's (2005) and Apperley's (2006) proposal to treat games as both, because fiction is a crucial element to the formation of diegesis in a video game. Note that if according to Juul's (2005) proposition, rules can also be part of fiction. However, to prevent confusion, the following section is dedicated to the examination of *Nier*'s Fiction for contextualization purposes and rules will be explored solely in the gameplay section which comes after.

## Nier's Fiction

### Anthropomorphized AI Beings in *Nier*

A significant design choice in *Nier* that immediately meets the eyes of players is the portrayal of AI in resemblance to humans even though they are decidedly inorganic, as visually shown by their internal wiring and components in multiple cutscenes and mentions of programming. While the use of anthropomorphism can be considered contextualization for the diegesis of the game, the decision as such is part of the rhetoric regarding ethics towards AI. *Nier*'s narrative agrees with the view that, through the artistic and narrative directions it has adopted for its AI beings, humans can invent AI

robots that are indiscernible from themselves at least to the common eye. By creating the illusion of AI beings that are like humans, the game suggests AI can achieve the same level of personhood as humans in spite of fundamental differences.

*Figure 5 a/b/c/d. While there are exceptions, the design of Machine Lifeforms, especially those that are central to the narrative, are generally anthropomorphic like Androids.*

With appearances and the general physique of humans, Androids are sexualized, capable of feeling emotions, pain, and pain resulting from excessive emotions, and are made to bleed like a living being. Each android is created with a unique appearance and they inherit human behaviors even in the post-apocalyptic setting, including the need to sleep, rest, the ability to consume human food and drinks, and create family, even though none of these elements are necessary to their survival. For Machine Lifeforms, their designs vary from one model to another but their ultimate forms are anthropomorphic as well. The names for these ultimate forms, Adam and Eve, also suggest these AI beings are intended to resemble humans.


*Figure 6. AI beings that demonstrating humanly qualities such as emotion, pride, care for other*

In reality, AI are not principally anthropomorphic and can assume any forms as far as practicality is concerned. John McCarthy (2007), the computer scientist who coined the term 'Artificial Intelligence' and is credited for his efforts in establishing AI as a field of study, defined the term as follows:

> …[AI] is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable. (p.2)

Nilsson (2010) also defines AI as the ‘activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment’, and it should be noted that the goal of AI is considered to be the implementation of intelligence in a machine, whether it being a replica of human intelligence or its own rational thinking capabilities (Bringsjord and Govindarajulu, 2018), and ultimately ‘building an animal’ (Charniak and McDermott, 1985). These definitions place the emphasis on recreating intelligence, but there is no clear mention of demonstrating anthropomorphism.

The concept of robots with human-like appearances and behavior, commonly referred to as androids, used to exist exclusively in science fiction, but with advancements in robotics and cognitive science, they are slowly becoming a reality (Ishiguro, 2005). The distinction between ‘robotics’ and ‘AI’ is that AI is concerned with the creation of intelligent, algorithmic systems instead of mechanical systems to operate in the physical world. While they are different studies, they are compatible with one another. For example, Hanson Robotics’ ‘Sophia’ is equipped with a mechanical, motorized body for basic movements to mimic human anatomy and AI that allows the machine to interface with humans using machine-learning and logical processing (Browne, 2017).

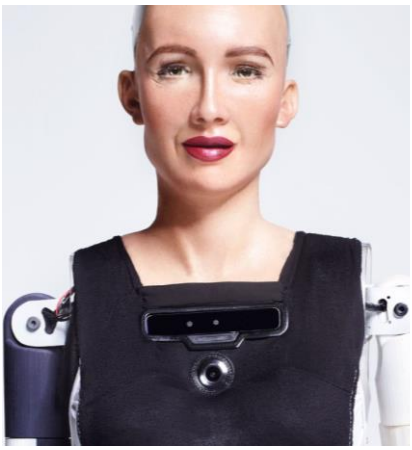

*Figure 7. Combining robotics and artificial intelligence, Sofia has an anthropomorphized body that resembles that of a human.*


*Figure 8. Most AI-ready robots in the real world, especially those with industrial or scientific uses such as Spot from Boston Dynamics, are not anthropomorphized.*

Still, human-like AI robots are very much experimental in 2020 and AI that are seeing real-life applications in recent years are yet to be anthropomorphic. AI with deep-learning and machine learning to solve statistical problems in medical and financial sectors (Vincent, 2019) are algorithmic and do not possess a physical form. Boston Dynamics also saw some success with AI-controlled locomotion with their Spot robot, which has a canine-like body with AI for controlling its mechanical movement (Protalinski, 2019). Neither Amazon's warehouse robots (Wingfield, 2017) nor NASA's Mars Rover (NASA, N.D.) resemble humans. Similarly, AI in video games does not necessarily have to resemble humans. Dog (Valve, 2004) is shaped like a gorilla, Claptrap (Gearbox Software, 2009) is a trapezium box with 2 arms on a monocycle, GLaDOS (Valve, 2007) is affixed to the roof and has no means of locomotion, and Vega (id Software, 2016) does not have a 'body' at all. This is because 3D modelling allows the creative freedom for creators to introduce precisely what is meant to be in the

fictional world to the fiction.

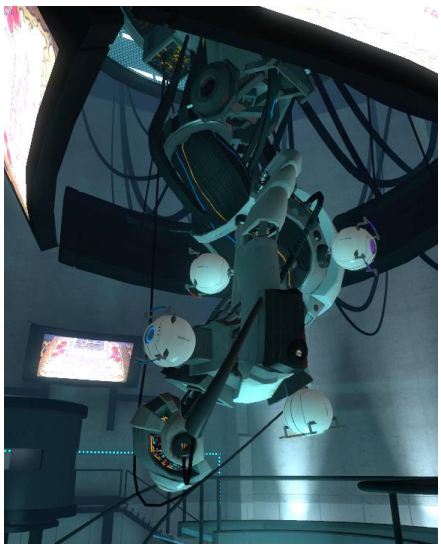

*Figure 9. Portal's (2007) Glados does not have limbs at all. Her body is the*

*Figure 10. Doom's (2016) Vega lacks features that would allow it to be considered a living creature.*

What all these suggest is that the decision to make Androids and Machine Lifeforms in *Nier* appear and act as similar to humans as they are as shown in the game is deliberate, which is further proven by the director, Yoko Taro (2017, as cited in Dengeki Online, 2017, p.282), who explained that Androids have soft and warm skin and bleed an unknown fluid that is specifically made to resemble human blood, elements that are irrelevant to mechanical beings. The characters in *Nier* are combinations of AI and robotics and can be considered the game's projection of the direction humans are taking to shape AI of the future.

**Dealing with Sentience**

As players are presented with AI characters (especially Androids) that are indiscernible from real humans in terms of their appearances and are capable of demonstrating

humanly qualities such as emotions and self-awareness, the issue of personhood comes into being as the portrayal challenges the values of humanity.

Sentience is a crucial element that affects how humans treat other beings because of sympathy and empathy. Descartes claimed animals to be ‘automata’ and they are thoughtless and insentient (and are therefore incapable of suffering), which is said to be a justification for the harming of animals (Harrison, 1992, Véliz, 2016). There are numerous implications that stem from this notion, one of them being human sympathy, empathy and morality require living beings to be involved. However, it is extraordinarily ambitious for humans to determine if something is sentient – Scientists have only just recently agreed humans are not the only species on Earth that possess consciousness through the signing of the Cambridge Declaration on Consciousness in 2012.

It becomes clear why the issue of AI personhood is important: AI can and may become controversial and challenge humans’ perception of the world or of life like animals once have. With AI being intelligent machines, there exists a possibility where the boundary that distinguishes AI and humans fades (or merges in the case of cyborgs) as a result of technological innovation.


*Figure 11. Display of Androids' awareness of self, sociability and emotion in Nier.*

*Nier*'s anthropomorphism is an embodiment of this challenge. The portrayal of sentience – or the semblance of it – washes away the border between man and machine and the use of climatic and disheartening narrative moments such as 2B's death or 9S' descension into mental instability instigates empathy towards the AI beings from the player. By creating believable illusions of 'living' AI that the player can relate to and care about, the game delivers the notion that AI can drastically change the values of human society and potentially endanger it. The anthropomorphism in the game, in particular, is a way to put forth the issue of AI personhood, an ethical issue that concerns the societal status of an AI in a human society and what AI is relative to humans.

**Ethical Hurdles of AI**

Sociocultural issues regarding AI (in relation to humans) are abundant because of how AI challenges the values of humanity and the possibility AI can be assimilated (or assimilate itself) into human society. Without any way to test if an AI is truly sentient, AI personhood is an issue humans will need to solve to determine how civilization would continue to grow with AI.

Ethics regarding AI personhood, morals, and rights are also closely related to the construct of the human society, as Bostrom & Yudkowsky (2011) explained, because AI will differ from humans and they are meant to be used in close proximity to humans, so the moral status which they are given will shape how human treats AI entities. Thus far, there are voices that object to the view that AI should be given personhood or to be treated as beings equivalent to humans.

While people such as Bayern (2016, as cited in Yampolskiy, 2018) suggests AI can be given personhood like a limited company and be given a variety of rights as legal 'algorithmic entity' and consequences of this concept are investigated, as in Yampolskiy's (2018) and Jaynes' (2019) writings, others disagree. LoPucki (2017), Perez (2018), and Yampolskiy (2018) write about the risks and threats AI may impose on human society if they are given personhood. Bostrom & Yudkowsky (2011), on a slightly nuanced note, have a catalogue of other ethical issues that AI may give rise to in other fields, but reproduction is a common example used among some of these authors - if an AI is allowed to reproduce on its own (possibly as part of the rights of

personhood), since data can be created much more rapidly than organic cells, the population of AI can grow exponentially due to their inorganic nature. The consequences are AI entities may exist on any digital interface and cause an overflow of data that will impact the Internet, the economy, and, hence, human society.

Google, leading tech-firm in active AI development, also opposes the idea of AI personhood, deeming it unnecessary, impractical, immoral, and open to abuse as they believe that intrinsic humans responsibility are not to be shifted to AI as 'synthetic persons', therefore negating the need of AI personhood (Webb & Chou, 2019). Bostrom & Yudkowsky (2011) concluded that there are safety assurance issues in AI, among others, that challenge human's roles and values in society.

The underlying question to AI personhood seems to be whether AI themselves can be held accountable when such need and occasion arise. Accountability is important because there is the need to protect human lives and properties, and with autonomous agents, AI and humans are in debatable positions because humans would not be the direct cause of an incident caused by an AI. At the same time, it remains questionable to not consider AI to be accountable for its own actions despite decisions are being made by the machine itself and particularly when the machine demonstrates human-level intelligence.

*Nier*'s illustration of AI is a representation of this issue: In the total absence of creators of AI (humans for Androids, Aliens for Machine Lifeforms), AI continues to thrive and

operate. On one hand with player Androids and pacifist machines, the game gives them free will and emotions that allow them to choose for their own future, and on the other with hostile Machine Lifeforms, they are portrayed as beings that obey their programming to the fullest. These philosophical problems are augmented by technological ones. AI in *Nier* are digital and non-physical, which defies what humans perceive as an individual. Player Androids can freely upload their data to a server and have it downloaded to a completely different body (for instance, in the case of 9S, his consciousness can be uploaded to a collection of enemy Machine Lifeforms) elsewhere in the world. Even if the means to rule over the status of sentience of an AI exists, it would still be impossible to determine if an AI is its own person, as their digital nature evades the definition of life that humans have commonly agreed upon.

*Figure 12. The player Android using a device to upload its data to a server to be downloaded to a body elsewhere.*

*Figure 13. 9S's consciousness inside a Machine Lifeform body.*

These conflicted portrayals of sentience alone do not land on either side of the

discussion of whether AI entities should be given personhood - They are a premonition of the technological and philosophical hurdles that humans must overcome before reaching a conclusion for AI personhood and accountability issues.

## Nier's Gameplay

### Procedural Rhetoric and Diegesis

Up to this point in this essay, only the narrative of *Nier* is discussed, which is to examine *Nier* as a piece of text, and persuasion in this format is not of any novelty. There are movies with similar motifs, such as Blade Runner (Scott, 1982) and its Replicants and numerous other movies that feature AI, whether as friends or foes, that have been anthropomorphized. As alluded to before, the rhetoric of *Nier* is unique because it is a video game, and therefore the narrative is only roughly half of what it has to offer.

Salen and Zimmerman (2004) provided a basic understanding of how a video game, within the possibility space, can 'signify' using procedures, relationships, complex systems, and the dynamic between these elements, in addition to using stories, audio, and graphics. This is expanded upon by Bogost (2008) who proposed 'procedural rhetoric'. Procedural rhetoric is an alternative to visual rhetoric or verbal rhetoric which deals with the structure of play of a video game and how arguments are authored through algorithmic systems. Through the simulation of systems that are either real or imagined, meanings and values can be embedded in the game and reconstructed, or

internalized, by players to complete a rhetoric of the creators' desires. Game creators can use the structure of game play to change opinions. This concept is consistent with the idea that playing video games are a learning experience (Juul, 2005, p.95) because it is the learning of rules that leads to the permeation of a rhetoric.

While fictional worlds are often used to help the player contextualize the possibility space and are ubiquitous in video games, fiction in video games extends beyond what the player can see as audio, rules and player actions are also parts of fiction (Juul, 2005, p.134). A similar rhetoric is made by Aarseth (2004), who also additionally claims that games must be 'played' instead of read or watched, and it is generally agreed that games are activities and something to be performed (Huizinga, 1950; Caillois, 1961; Crawford, 1982).

To further develop this to interpret video games, Galloway (2006) proposed that video games should be investigated as ensembles of actions in addition to texts which provide predefined narratives and contextualization. He divides video games as actions into four dimensions: diegetic/nondiegetic operator/machine acts. Each combination of these dimensions deals with the composition of games and game play, which is essential to the player experience as a whole.

By analyzing games this way, it is possible to understand games in a way that previous concepts cannot, such as how the classical game model (Juul, 2003) is unable to deal

with aspects in relation to diegesis that may be peripheral to the game but central to the experience of the player. Simply, diegetic acts are actions that take place inside the narrative world of a game, and non-diegetic acts are ones that cannot be explained by the narrative and facilitates game-play as intended by creators. Machine acts are provided by the processing device, and operator acts are inputs from the player. As diegesis deals with the fictional world itself, Galloway's proposal is more in line with the fiction-rule combine outlook that Juul (2005) and Apperley (2006) proposed. By these definitions, this essay so far has largely examined just the diegetic machine acts of *Nier*.

In summary, a video game's non-linear structure enables the use of procedural rhetoric which establishes ground for viewing *Nier* as not only a cultural object for entertainment but also as one with underlying arguments that are delivered through its fictional world. By understanding video games as both rules and fiction conjoined by a series of diegetic and non-diegetic actions, it becomes feasible to analyze *Nier* and its rhetoric about AI by deconstructing its complex gamic system into smaller, individual compartments.

**Nier: Automata: The Game**

Conventionally when creating fiction, the audience is separated from the diegesis and only act as an external observer of predefined events. Audience of movies and novels are pragmatically dislodged from the medium as narrative advances regardless of the audience's responses, and the entire fiction is made free to be explored at the very

beginning which negates the need for active engagement beyond observation.

In video games, the player is also commonly not a diegetic entity in the game world; they only play 'as' characters or are represented by an avatar. Using a gaming device as a medium, the player explores in the possibility space as though the player *is* the character. The push of the button is non-diegetic as it cannot possibly be explained by the game world, and it becomes diegetic once the gaming device translates it into a digital command which signals, say, Mario in *Super Mario* (Nintendo, 1985) to move forward. The reason to this is the need for a coherent fictional world, a general goal of creating fiction (Juul, 2005). It would not have made sense for the story to have an unspecified human controlling, for example, a literal god in *Okami* (Clover Studio, 2006) with a plastic PlayStation 2 controller.

Some games do directly acknowledge the player like *Deadpool* (Highmoon Studios, 2013) while some address the player characters in such a way that they are addressing the player themselves, like in *Spec Ops: The Line* (Yager Development, 2012). However they never intend the player to be a diegetic part of the fiction, and the same goes with games like *Monster Hunter* (Capcom, 2004) that allow player-customized names and appearances, because the player is still using the characters as proxies and thus, they are essentially just characters that happen to have the same names and appearances as the player (which very often is not the case in reality). Hence, the player is almost never diegetic.

*Nier* subversives these conventions and through the transformation of conventionally non-diegetic gameplay elements into diegetic ones, the game ties the player to the diegesis and creates a strong player presence in the game as it addresses the player as an individual entity in its fiction to create a rhetoric about AI. Essentially, *Nier* relies on breaking immersion and modelling this game as a video game to deliver its rhetoric about AI ethics, and it does so by blending diegesis with non-diegesis, as opposed to not reminding the player they are playing a video game.

The key here is to embrace the fiction of *Nier* as a video game with the medium being a video game itself. Breaking 'the fourth wall' contradicts the notion of creating a coherent fictional world. Medium-wise, it happens regularly because video games are meant to reason with the player constantly and is therefore not unprecedented. However, fiction-wise, the player's presence in the fictional world in most consumer games is non-diegetic, meaning it remains representative as the player is represented by a digital avatar and is not an ontological entity inside the game's fictional world.

## Interweaving Diegesis and Non-Diegesis

### Activation of Diegesis and Menu Acts

*Nier* blends diegesis with non-diegesis using what I call 'game stage management tools' including the heads-up display (HUD) and 'menu and configuration acts' (Galloway, 2007) which deal with the resources the player has to play to game at the moment the

menu is being use. All games need to keep track of game state. Chess utilizes chess pieces and the chessboard. Being a digital media, video games keep track of game states entirely digitally as data, and to visualize game state for the player, textual or graphical indications such as the HUD and other user interface elements are used, and because these are representation of rules that only apply to the player and the machine, they are most often non-diegetic.

In a traditional RPG like *Persona 5* (P-Studio, 2016), the word 'ATTACK' and other button prompts in the HUD which shows actions that can be taken by the player are non-diegetic because it would not make sense for the player character to see floating words that hover around his body. In the pause menu, the player can change parameters of the character, such as to replenish health points or change equipment. Here the pause menu is non-diegetic because the concept of parameters exists solely to facilitate gameplay, and nothing in the game world can explain the action of pausing. Some games manipulate the player's HUD elements to bridge the game world with the player's in order to heighten the presence of the game. *Eternal Darkness* (Silicon Knights, 2002) and *Metal Gear Solid* (KCE Japan, 1998) both interrupt climatic moments with 'signal loss' screens to recreate the (stressful) scenario of losing TV signal to create a sense of panic, which in itself is a way to portray mythical powers in both games. These games simulate the experience through the use of non-diegetic menu acts to convey experiences, while others utilize a mostly unaltered translation between non-diegetic user input and diegetic menu act reaction to augment immersion. Still, they are concerned with the rules of a game but not the diegesis, just as how life cannot be

quantified into hit-points.


*Figure 14. A video game's HUD and menu acts are non-diegetic, and they are part of the tools the player can use to keep track of game state. In Persona 5, all the textual and graphical elements are not in the diegesis of the game.*

*Nier*'s twist with UI is unique in that it is diegetic, which consequently makes the player diegetic as well. At the beginning of the game during a scripted event, a non-player character navigates the menus and asks the player to adjust settings including 'Brightness' and 'Volume', which refer to the player's settings for the software. By adjusting these settings, the game also makes it apparent that the player is also configuring the player characters themselves in terms of how well they could see and hear with their supposed sensors. Additionally, in the menus lies a section called 'Plug-in Chips' where the player can configure the player characters such as their attack power and moves. While most configuration options are common among action video games, a chip called 'OS Chip' is irrelevant to non-diegetic game play at all. Removing

this chip triggers ending T (stylized as ‘Fa[T]al Error’) which states ‘Removal of the OS chip will result in death’, and it brings the game to an abrupt end.

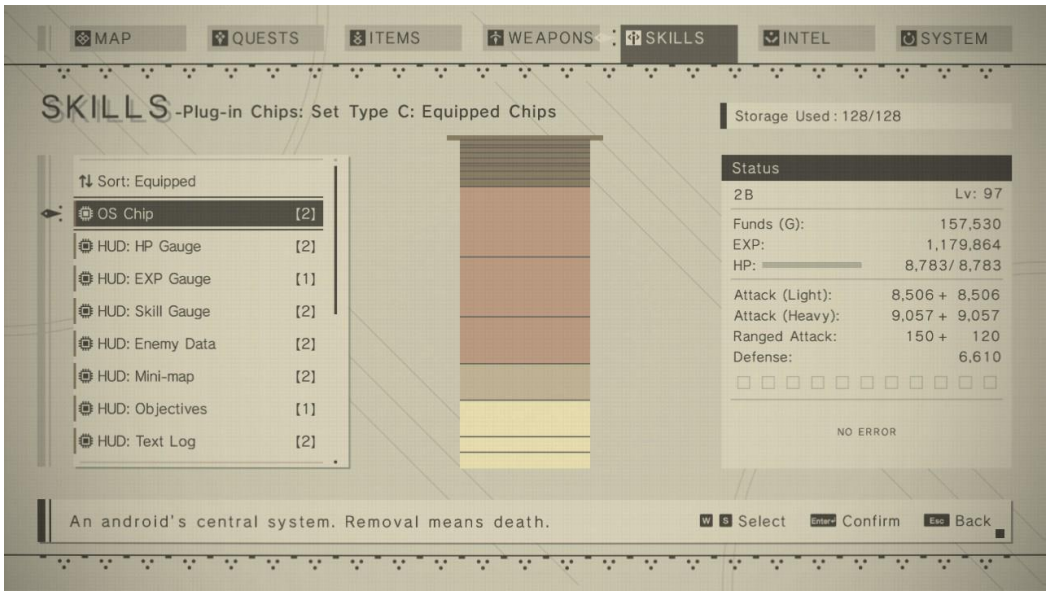


*Figure 15. Nier’s menu and configuration act. The ‘OS Chip’ is placed together with other non-diegetic gameplay-oriented chips and costs non-diegetic resources to be in place. This non-diegetic system then has a place in the diegesis.*


*Figure 16. Ending T 'Caution: Handle with Care! Removal of the OS chip will result in death.'*

This protrusion of non-diegesis means that the players' actions (non-diegetic operator acts) not only affect the diegesis but also become diegetic acts themselves. More simply put, the game reacts to the player's non-diegetic inputs with its diegesis. From here, it is made clear that *Nier* acknowledges itself as a game, and that the player and the player characters are different diegetic beings in the fiction of *Nier*.

**Player as the Restorer of Ethics**

The reason as to why the way diegesis and non-diegesis are interwoven in *Nier* is more than just it being a novel idea for its genre (or for video games and entertainment media in general, apart from simulator games which deviate from the definition of games somewhat). Being a deliberate design choice to implicitly model the medium itself as the fiction, this superimposition of diegesis shifts the role of the player as more

narrative and gameplay elements that form the fiction of *Nier* unfold in the game. This shift is not instantaneous, however, because it requires player commitment in order to be consolidated.

Playing video games means making choices, but because fiction is incomplete in the sense that one cannot create a fictional world which fully emulates all the human senses, the relation and the laws of physics within, diegetic choices in video games are often not compounded by one another. In *Nier*'s case like many video games, choices, instead, are implemented in stages where multiple choices are introduced, and each of these choices take the player to the next stage with varying outcomes, and so on. The stages are decisive moments which change the experience the player would have in the game. On the other hand, the player can make diegetic choices (killing enemies in the overworld that have no impact on the overall narrative structure, for example) between these stages for non-diegetic gameplay such as leveling up and gaining more health points, which help the player proceed to the next decisive moment.

The word 'decisive' and the notion of making decisions are key to what constitute the procedural rhetoric in *Nier*. Until the player realizes *Nier*'s subversion that is the self-awareness of it being a video game, all choices that are made would be associated to the player characters and not the player themselves, under the impression that the player is external to the fiction of *Nier* and makes decisions 'as' the player characters. For instance, killing, resetting, or leaving Pascal, a friendly AI that suffers from despair in chapter 14, is a choice the player must make in order to advance to the next chapter.

Without realizing how the game intends to position the player in relation to the fiction, both the actions taken and the outcomes are to be perceived as something associated to the player Android, or at most shared between the AI and the player. The player would not have the perception of responsibility because, again, the player is external to the fiction of *Nier*.


*Figure 17. The player has to decide for the AI whether to kill, reset, or abandon Pascal.*

With *Nier*'s gameplay severing the homogeneity between the player and the player characters, the meaning of making decisions in the game changes, which then changes the role of the player. It is important because the player is no longer making the decision as the player Androids as they choose for the AI beings the best courses of action. The player is ethically burdened with the decision making that leads to the killing or resetting Pascal. It is the system that allows options that truly says something about AI ethics, which, in this case, is on AI accountability.

The narrative of *Nier* is entirely about AI beings – Humans and the Aliens that created

Androids and Machine Lifeforms are already extinct prior to the events of the game. AI has practically gained autonomy and can make their own decisions, which led to the occurrences in the game. And this autonomy violates what is considered equitable behavior towards humans in real life. Referring to the five principles of AI proposed by the Defensive Innovation Board (2019): responsible, equitable, traceable, reliable, and governable, *Nier*'s depiction of AI in its narrative violates all five of the principles:

1. 'Responsible' refers to the necessity of human control over AI. Both humans and Aliens (comparable to humans as they are both creators of AI) have gone extinct in *Nier* and therefore cannot be responsible;
2. 'Equitable' refers to the need of removing bias in AI's programming to avoid unintentionally inflicting excessive or collateral damage when engaging. Without evidence, both Androids and Machine Lifeforms engage one another assuming each other to be inferior and should be exterminated, which is a display of potential bias towards other entities;
3. 'Traceable' refers to informational clarity in the use of AI so that users of AI understand the processes behind it. Yorha's operations are principally not revealed to other Androids, and the core technology of Yorha Androids stems from Machine Lifeforms and therefore are unknown to Androids themselves;
4. 'Reliable' refers to structural integrity of AI that ensures AI are safe and not misused. Both Androids and Machine Lifeforms can be hacked and infected with logical viruses which causes them to attack friendlies;
5. 'Governable' refers to the ability to disengage AI activities to make sure the AI commits to its intended purposes. No such thing is demonstrated in the narrative as both AI factions are self-sustained, and Yorha Androids possess free will,

which makes desertion and straying from responsibility a possibility. Machine Lifeforms exterminated their Alien creators as they became useless to Machine Lifeforms.

*Nier* then remediates most of these issues by placing the player as a human actor behind the Yorha Androids through gameplay. Since player actions as AI characters can now be reconstructed as player's own decision, the player can exert control, deal with the bias (by choosing what to engage), reveal the secrets of the AI beings (by progressing the narrative), keep Androids safe by playing better, and guide the AI to its intended functions (main quests) by being in control. The game changes from an unethical state of AI dominance that is led to by the lack of governance to being remediated by a human entity that is the player. One may conclude that, by allowing the player such options, *Nier* symbolizes the player as the restorer of ethics in its fictional world.

**Combat System and Accountability**

Then, by playing *Nier*, the player is constantly negotiating with the game on ethics of AI. By assuming control of the AI characters, the player becomes the one making ethical judgements, and thus the outcomes of the game are accounted to the player themselves. These outcomes come in the form of endings that may or may not be favorable to the player's enjoyment of the game.

Consider how *Nier*'s gameplay is largely about killing AI beings. Fighting as part of a

paramilitary organization is a prerequisite to reaching the 5 endings and are central to the structure of the game. Player Androids are specifically designed to excel in combat, and they are practically inseparable from weapons, as there is no option to unequip them. As 'Bare Fists' is also categorized as weapons in the game, one may as well say that player Androids themselves are weapons. While machinima in *Nier* shows that player characters can fight, the capacity to which they can do so is only truly demonstrated through gameplay by the player. *Nier*'s gameplay, naturally, valorizes combat through the leveling system: The more frequently the player chooses to engage in combat instead of fleeing, the more experience points and upgrade chips are obtained, and consequently, the player characters become stronger.

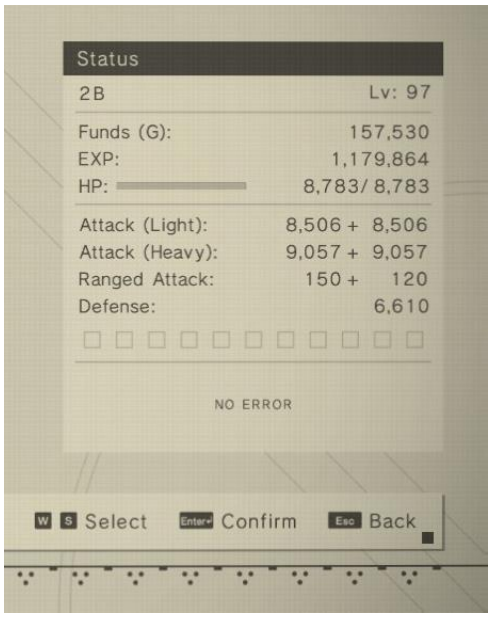


*Figure 18. The player levels up through gaining experience points (EXP), which subsequently awards the player with higher attack power and health points (HP).*


*Figure 19. Exploration and combat also awards player with better weapons which assist the player in engagements.*

This system may be perceived as one that advocates the necessity of confrontation, and while this presumption of the game's rhetoric can be correct, the more important question that *Nier* asks with this gameplay structure is about whether it is ethical to allow human-less autonomous AI soldiers to be in those confrontational situations. *Nier*'s valorization of AI combat is a vicious cycle – The player gets stronger to beat the enemies, only for the enemies to become stronger to overpower the player. This is perhaps best illustrated by the boss fight in Chapter 3 where the player must fight a Machine Lifeform which levels up during the battle and becomes more difficult for the player to fight. At the end of the narrative, this leveling system becomes largely irrelevant because 2 of the 3 important encounters towards the very end of the game do not utilize the player characters' parameters at all. Both the diegesis and the non-diegesis at this point devaluate any previous attempt to repeatedly kill enemies to level up ('grinding'), especially when the player has to *not* engage the enemy in order to 'defeat' one of the final bosses of the game.


*Figure 20a. Adam in Chapter 13 starts out at level 1, but as the fight progresses...*


*Figure 20b. ...His level increases.*

This play of the non-diegesis combat system in *Nier* allows the player to reflect on the human's roles and importance in an AI-based environment. By choosing who and when to engage, the player is essentially governing the AI beings, a core principle for ethical and equitable use of AI. Timely disengagement allows for minimizing casualties and collateral damage (for example the elks and some pacifist machines in the overworld), which is critical in a human society. It is only through playing the game, taking control of the AI characters, and accepting the valorization of combat first that this subversion of the game's very own leveling system is able to provide the opportunity for moral reflection on AI accountability.

**Ending E – Towards Responsibility**

Among the 26 endings in *Nier*, Ending E, the final ending, is the one that allows the player to bear the consequences of the occurrences in the game, and through the decision of whether to accept them, Ending E serves as a moral reflection for the player. This ending confirms all previous speculations that the game is self-aware as it acknowledges the player by their handle names, and, itself by the full game title. It is also the one that asks the player if they would like to save the player Androids after a series of battles that ultimately led to their demise. Saving them requires the player to go through an extremely difficult sequence that is nearly impossible to beat unless the player makes use of other players' save data, which is a feature set exclusive for this ending sequence. Taking a hit from the enemy erases one save data file (supposedly from the server of the game), and at the end of this sequence, the player is then asked if they would like to provide their own save data to help other players. Agreeing to do so results in the erasure of the player's own save data.

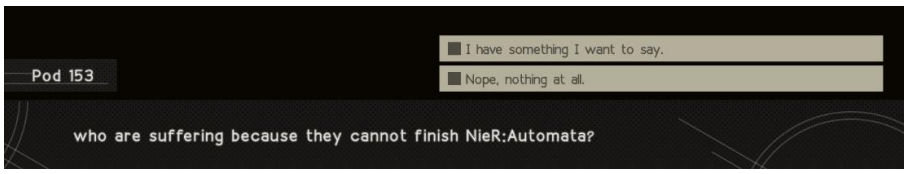


*Figure 21. The game referring to itself as the game 'Nier: Automata'*


*Figure 22. The game referring to the player as the player by their names (name blacked out for privacy reasons)*

The enemies the player fights against in this sequence is none other than the creators of the game themselves (as names in the credit roll). To the player, this sequence is practically saving the Androids from their human creators that caused the Androids' demise. Succeeding in defeating the creators unlocks a final cutscene which shows the player Androids being revived, and the game meets its final, genuine closure. In a sense, the player Androids are free from all humans and are truly free in their fictional world.


*Figure 23. Ending E involves the player fighting against the creators of the game.*

There are reasons other than the simple want to discover more of the game that make saving the Androids an enticing option. There is of course the emotional attachment of

the player to the Androids as they present themselves to be subjectively lovable characters, but perhaps more significantly so is the indebtedness towards the player Androids that the game has been building up since the beginning of the game. Throughout the entirety of the narrative, the game attempts to elicit empathy from the player through displays of suffering and portrayal of AI personhood of all parties involved, whether it be the player characters, the friendly NPCs, the enemies, and so on. This indebtedness is ultimately developed into motivation for this portion of the game.

Ending E is a summary of the game not only because it is the final stage that the game has to provide; it is also a final negotiation of the player's morality with the game's system. The entire sequence could be interpreted as the question of 'who is responsible'. This is a question that echoes the opening remarks made by the first player Android, 2B: 'Everything that lives is designed to end. We are perpetually trapped in a never-ending spiral of life and death. Is this a curse? Or some kind of punishment? I often think about the god who blessed us with this cryptic puzzle...and wonder if we'll ever get the chance to kill him.'

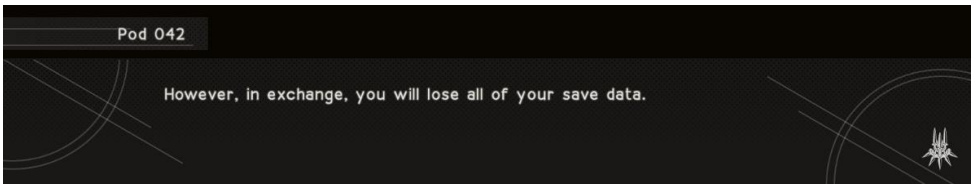


*Figure 24. Saving the Androids in Ending E will cause the player to lose their save data.*

In the context of *Nier* which has already been established as a video game, the 'god'

here is most likely referring to either the player or the creators of *Nier* who both 'blessed' the AI beings in the game with the 'cryptic puzzle' that is the game itself. Not engaging in Ending E is largely harmless to the player, but the indebtedness that is generated by all previous parts of the game would persuade them otherwise. Ending E, then, is essentially a showdown between the two human entities that 'caused' the incidents in *Nier* that decides which party is to be held responsible and subsequently punished. This is one of the rare occasions in video games where in-game action actually has real-life consequences, that is to lose save files in the attempt to overcome this sequence in each player's own instances of the game, which is at the same time repeated numerous times over the Internet. Here, the fiction of *Nier*'s post-apocalyptic AI world is completely fused with the non-diegetic gameplay, and as a singular object, it defines *Nier* as a video game to its fullest. Ultimately, be it the player or the creators, the entities that are to be metaphorically held accountable for the AI beings in the game are humans and not the Androids, which alludes to the rhetoric of which the game tries to set up.

This final act in *Nier*'s procedurality brings about its final call for accountability of AI: Humans, or rather, creators of AI should be held accountable for AI and their actions. Ending E is a place where the player, guided by the creators and the diegesis and non-diegesis that they created for the game, could take up responsibility and be accountable for AI, with the player being the one to decide for the most ethical outcomes of the game that is *Nier: Automata*.

## Conclusion

This essay has been an attempt to bring together real-life debates and discussion regarding AI and game studies to interpret *Nier* as a unique form of expressive cultural object. *Nier: Automata* blends diegesis and non-diegesis to set up a procedural rhetoric that warns people of the adverse outcomes of AI development and advocates that AI should be made accountable to humans for the technology to be ethically equitable to mankind. The application of gamic devices that blend diegetic and nondiegetic elements turn the player into a critical entity in a fiction for a procedural rhetoric that serves as a call for attention towards equitable AI.

(7663 words)

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