

Autopoiesis Crosses the Human-Machine Boundary——A Brief Analysis of the NPC Image in the Film-Game Integration Movie

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Abstract. In recent years, with the development of popular culture and digital technology, there has been a new trend of fusion between online games and film art. In movies themed on popular games, some NPC images have developed self-awareness with the operation of artificial intelligence systems, they own the information body and the self-generating system, regarding human player as the mirror to self-identify and become a channel between the virtual and real worlds. These images play an important role in the narration, some of them resist system instructions in the climax of the story, not only break the original rules of the game, but also evolve new life forms, and challenge the authority of the traditional human-machine boundary for the acquisition of emotion, memory and thinking. The film's vivid interpretation of the NPC autogenesis process enriches the characters and expands the meaning of the theme, at the same time, it allows us to reflect on the contradictions and conflicts between humans, machines and other species from the perspective of virtual life, provides some inspiring opinions on how to meet the unknown posthuman future.

Keywords: NPC, Film-Game Integration, Posthuman, Autopoiesis, Man-machine Relationship.

1. Introduction

NPC (non-player characters) refer to native characters in video games that are not manipulated by the player, and are generally controlled by the computer's artificial intelligence engine, and are assigned certain tasks based on their function, such as delivering information to the player, fighting alongside the player, and those that are integral to the story and have a variety of interactive functions that drive the narrative. Do NPC have a sense of individuality? Can they develop the ability to think, reason, etc.? This is often the focus of film adaptations.

Along with the development of cross-media and media convergence, there have been numerous films based on popular video games, using special effects technology to make intertextual film and television presentations of classic game IP to bring audiovisual experiences to audiences, especially game players. At present, the research results mainly focus on intertextuality, cross-media narrative, fan culture, film aesthetics and IP refinement operation, etc. The literature on the NPC image and its autopoiesis process in films is relatively small and needs to be further revised.

2. Method

Based on posthuman theory, this paper uses textual analysis to examine the image of NPC in film-game integration movie, such as *Free Guy*, *Tron: Legacy* and *Ready Player One*, focusing on the changes they undergo under the domination of the autopoietic system and the paradoxes of survival that this raises, and then extending to what impact technological beings such as artificial intelligence will have on human production and life in the future, and what attitude we need to adopt to deal with them.

3. Result

3.1. The image of NPC and their autopoiesis process in the film-game Integration movie

NPC are made up of information codes that generally act as helpers or benefactors in the game's sphere of action, and may transform into villains who inflict tribulations on the protagonist when they

possess emotions and desires. The film's writing of their autopoiesis process often leads to the climax of the story, where the NPC grows from an obscure, flat character to an action figure who saves or destroys the world, and in these adventures, full of spectacle and sufficient to manipulate the desires of the masses, we can find something to ponder.

3.1.1 Artificial life and the informational body

NPC, as part of video games, are given artificial bodies and genetic sequences constructed from computer code by their creators. Norbert Wiener, the father of cybernetics, believed that the universe consisted of information and that the process of receiving and using information was the process by which man responded effectively to external environmental conditions and their changes. The human life can be seen in a way as a string of information codes, and the free flow of information from physical carriers creates many possible ways for the body to exist in different contexts, such as the "cyber cowboys" represented by Case in *Neuromancer*, who can connect their personal nerves to the network to steal business company secrets, travel freely around the world and even live all day long around the world, or even live in one place all day. Accordingly, posthuman theorist N.Katherine Hayles points out that the relationship between human beings and the world has now changed from one of presence/absence to one of mode/randomness, with the materiality of the subject experiencing information technology being reduced in relation to concrete contexts and the virtual property of being connected to information technology being increased, and the randomness of 'digital existence' comes to the fore in the context of the replacement of the body by the code.

NPC are virtual characters, essentially built on a set of computer programs that execute central system commands or control themselves according to predetermined programming, and as game technology has evolved, more and more NPC have evolving artificial bodies inside cyberspace. In the eyes of game players, NPC are often taken for granted as 'others' - background characters or slaves in their service, without full subjectivity. For example, the NPC Guy in *Free Guy* is a bank clerk who lives his life like clockwork every day, even all the clothes of his are identical. Clu (the full name is "Codified Likeness Utility") in *Tron: Legacy* is a set of thinking coded clones made from human genes, charged with guarding and creating a more perfect video game world. The NPC in *Ready Player One* are richer in form, such as the Curator, who is the avatar of player Morrow's actions in the Oasis with the help of a VR device, which is the physical equivalent of a recreation "created in the electronic environment through linguistic and semiotic markers"¹, and Anorak is the avatar of game designer Halliday, who has created a three-dimensional person with a virtual form by transferring the Mindfile².

However, when a random event intervenes, resulting in a sudden change in the flow of information and feedback loops, the NPC also enter a state of disorder and their life activities become somewhat uncertain and random, not only actively rejecting the action instructions issued by the core program, but also struggling to gain more autonomy in their actions, which makes their mode of operation unpredictable and unpredictable. In particular, when NPC develop a certain degree of self-awareness, they will observe the player's behaviour and behaviour from their own point of view and identify themselves with the player as a mirror image. In this case, they will break out of the mode of action given by the game developers and violate the rules and paths previously laid down.

So how is the NPC's consciousness generated and how do they control their own bodies?

3.1.2 The emergence and mutation of self-awareness

(a) Autopoietic systems: emotion, memory and narrative

¹ [US] N.Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics and Writing Machines*, translated by Liu Yuqing, Peking University Press, 2017, p. 6.

² Mindfile refers to the data and information related to individuals needed for the cloning process of human minds, such as statements posted on social media, etc. Scholars such as Shen Yang argue that the creation of a virtual digital person requires the quantification of mindfiles and the operation of mindware to conduct file review, personality trait collection, information assessment and image replication, and generate virtual the personality profile of a digital person is created through these steps. For more details, please search the following link @New Media Shenyang: "Virtual Digital People: Traceability, Application, Development", <https://www.163.com/dy/article/G40PBVEG0511ABV6.html>.

Chilean neurophysiologist Maturana and his collaborator Varela believe that artificial systems have the right to survive as living things, whether they are flesh and blood or information pathways. Maturana states that “the ability of living tissues to preserve their own autopoietic organization is a sufficient condition for them to be living systems. All living systems are self-creating. All physical systems can be said to be alive if they are self-creating.”³ Video games as a physical organization and as self-generating systems are relatively closed and are riddled with all kinds of information feedback loops, which is also in line with Johan Huizinga's definition of games: “We find that one of the most important features of a game is its spatial detachment from ordinary life. An enclosed space with distinct markers, which may be both physical and imaginary, is isolated from the everyday environment.”⁴ It is in the process of self-regulation that the NPC “acquires reason and consciousness”⁵ and shapes itself through the help of emotions and memories.

According to Rousseau, the formation of emotions means that the human being enters the most primitive state of being able to describe his true feelings about life, so that emotions become almost a natural part of the human being and an important part of the NPC's autopoiesis. Memory is an important element of individual identity, and NPC have both fictional memories, which are set by the system, and memories that are stored autonomously, and which are derived from their actions have a more important influence on their self-perception. The NPC Guy in *Free Guy* makes his first self-choice when he falls in love with the heroine, and gradually evolves into other types of emotions when he chooses to follow his heart's will after grabbing the player's glasses and using them to see the living world for what it is. In *Tron: Legacy*, Clu is driven by ambition to betray his creator Kevin Flynn and go on a killing spree in the virtual world because he can't stand the new life form, the Iso's, which is automatically created by the system.

“Autopoiesis machines, through ‘their interaction and transformation’ continuously regenerate and realize the network of processes (relationships) that produce them”⁶. In the original autopoiesis process, the NPC mainly obey the characterization to communicate with the player or other NPC in dialogue and work together to complete tasks, just as Anorak, who is removed from the control of real people in *Ready Player One*, guides the “Egg hunters” to find the hidden keys. When NPC develop emotions and individual memories, they not only exist as data nodes in the hypertext network, but also interact with the real world represented by the player group in accordance with their inner thoughts. In this case, filmmakers often “add rich narrative elements to the game plot, increasing the narrative content of the movie on top of the game context, and using the story and artistic connotations to reach the audience's attention”⁷ so the narrative perspective of the film switches back and forth between the indeterminate internal focus and out-of-focus, suggesting that the NPC may have entered a relative free state of tuber-like sprawl, enhancing the subjectivity of the narrative.

Autopoiesis units can constitute a separate self from the observer, some of the NPC in the film are characterized by reverse control, i.e. a unit once used to organize the generative system becomes a component of the system itself, shifting from the position of the observed to that of the viewer, with more dominance and choice, which makes the characters more complex and varied, also expanding the depth and artistic expressiveness of the film.

(b) Self-identification and patricide complex

NPC are the result of the ideas, wisdom and skills of the game's designers, who, upon awakening to their own consciousness, are able to use information coding to continue their self-generated production, building up their life systems through information augmentation and opening up new spaces for their existence. In this process, the NPC are stimulated by certain things and become

³ [US] N.Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics and Writing Machines*, translated by Liu Yuqing, Peking University Press, 2017, p. 182.

⁴ [Dutch] John Heijzinh, *The Man of Play: A Study of the Play Component in Culture*, translated by He Daokuan, Flower City Press, 2017, p. 25.

⁵ He Liu: “A Study on N. Katherine Hayles's Post-humanism”, Southwestern University 2019.

⁶ [US] N.Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics and Writing Machines*, translated by Liu Yuqing, Peking University Press, 2017, p. 192.

⁷ Huang Lei, “A Study on the Transmedia Storytelling of Films Adapted from Video Games”, Soochow University 2020.

confused about their own identities, not understanding who I am in front of them, which is in line with the classic narrative stereotype of Hollywood films: the question to the subjectivity of “Who am I” and the meaning of personal existence. We can draw on Lacanian mirror theory to analyse this kind of self-identification, which takes place at the stage of autopoietic transition.

The mirror stage corresponds to “the Imaginary” of Lacan’s Three Realms doctrine, which originates when the non-speaking infant first acquires the concept of “I” by integrating the fragments of his or her previous perception of the individual body through a complete self-image in a mirror, on a sociocultural level this means that the individual, who has not yet formed a stable connection with the outside world, constructs a perfect idealized self in the context of the other, and in the process of self-objectification the ‘he’ becomes the ‘I’, but this image is false, imaginary and based on illusion. By mirroring the player’s self-identity, a misidentification of the ‘ideal-me’ actually takes place. In film, NPC use the artificial mirror image to enhance their understanding of the whole self, as in *Free Guy*, where NPC Guy aspires to love and friendship among humans and wants to realize his individual worth by doing more good. However, the NPC fail to realize that the relationship between them is not equal: once they discover that the system is not working properly and cannot be repaired, the humans follow their rational decisions and destroy the NPC that violate the rules, fundamentally rejecting their subjectivity and eliminating the possibility of coexistence with them.

For this reason, in order to seize personal subjectivity and break the rules of the symbolic order to transform from slaves to masters, NPC may challenge the game engineers (creators), as in the case of the coded clone program Clu in *Tron: Legacy*, who tries to replace the game’s inventor Kevin Flynn as the new ruler of the Grid, revealing strong feelings of patriarchal and patricide, the creation or dissolution of a new dichotomy between the positive and the negative when the offspring break through the regulation of patriarchal forces is also a symptom of anti-anthropocentrism. In the early twentieth century, Nietzsche cried out that “God is dead”, arguing that man’s desires trumped reason and that the will to power should be used to rebuild the world. However, the death of the “man” in the mid-twentieth century gave rise to a new series of revaluations, and in the view of the post-humanists, “human beings are not always in charge of their own destiny and that of the planet they inhabit, and they sometimes have to rely on the help of other species in nature or even of things created by human beings themselves.”⁸ The interpretation of NPC’s autopoiesis progress in film and TV productions can be regarded as a demonstration that human subjectivity and traditional logocentrism have been impacted by the new wave of cultural thinking. But most science fiction films ultimately choose to end with the establishment of a new world or a new equilibrium, a temporary respite from the horrific cyber catastrophe, the tensions of the human race on the brink of extinction and other fears raised by advanced technologies that precede the plot, it also confirms the classic narrative strategy of Hollywood films, which “attempts to present and deflect a profound crisis of social consciousness in modern Western society, especially in modern American society, through the imaginative reconciliation of the dichotomies loaded by its deep structure and accomplished in the course of the narrative.”⁹

3.2. Confusing boundaries: autopoiesis challenges the human-machine boundary

Robotics researcher Hans Moravec has suggested that the era of carbon-based life is coming to an end and that intelligent machines will replace humans as the key species in the universe in the future. Currently, artificial intelligence is changing human society at an unpredictable rate, and “the nature of man is undergoing a range of changes from the structure of biogenetic information to the ability to reason, and is facing an even more profound and dramatic evolution to come.”¹⁰ Science fiction films set in video games or other virtual worlds convey the desire and expectation of such advanced technologies, but also the implied anxiety that they will eventually escape human control and threaten

⁸ Wang Ning, “Post Studies in the ‘Post-theoretic Era’: On the Relation between Literature and Machine”, *Foreign Literature*, Vol. 2, 2013.

⁹ Dai Jinhua, *Film Criticism*, Peking University Press, 2004, p. 108.

¹⁰ Han Shuifa, “Humanism in the Era of Artificial Intelligence”, *Chinese Social Sciences*, Vol. 6, 2019.

human existence. For example, whether electronic beings qualify as human beings, whether intelligent beings can acquire full subjectivity, and how to define equality, the boundary between human and machine in these propositions has become confused under the impact of cybernetic and post-humanist thinking. Intelligence, rationality and emotion are the distinguishing features of humans compared to other animals, but can we still deny them the condition of being human when machines also possess these characteristics and do a better job than humans in dealing with critical issues? According to robotics researcher David Levy, in fact, “as we come to recognize the various virtual emotions and experiences hidden behind robots, we will feel less and less that robotic emotions are artificial.”¹¹ Further, if intelligent machines can cultivate thoughts, emotions and vitality while humans are alienated by technology and reason and forget their humanity, eventually having to rely on mechanical conditioning to produce emotions (*Do Androids Dream of Electric Sheep?*) Who, in all fairness, can be qualified to be human?

From the perspective of cybernetic theory, everything in the world can be measured and described in terms of information, and all species should be treated without distinction, as is the case between humans and automatic machines and artificial intelligence. Whether we plan for the long-term survival and reproduction of our species, or focus on the satisfaction of our immediate selfish desires, we are in varying degrees of contact with the principle of anthropocentrism, which seems to constitute another paradox.

While the films are ostensibly about the struggle between man and artificiality, such events as a whole refer to the crisis of modern civilization. Further, in anti-utopian films such as *The Truman Show*, *The Matrix* and *Ghost in the Shell*, we can glimpse a metaphor for a modern society that is a combination of *Nineteen Eighty-Four* and *A Beautiful New World*, where people's actions are recorded or designated by digital technology, where they are programmed to perform tasks like robots at work, and where they are immersed in entertainment prepared by expert systems outside of working hours, where they suffer mental exploitation in laughter unconsciously and gradually lose their ability to feel pain and think critically. People at the bottom of the hierarchy under this all-encompassing mental control are like walking NPC whose lives are out of their control, whose spirits are not their own, whose behaviour has become monotonous and rigid, and who have long since become accustomed to one-way thinking and a pan-entertainment attitude, “the distinguishing feature of developed industrial society is that it effectively stifles the need for freedom, that is, the need to be free from situations that are still tolerable, beneficial and comfortable. from situations that are still tolerable, beneficial and comfortable, while it tolerates and condones the destructive forces and inhibiting functions of affluent societies”¹². The decline of human subjectivity will eventually become the disease of the century for human civilization.

Perhaps we should break down the humanistic binaries of human/non-human and body/mind, and approach the birth of new species with a more equal and open mind, improving self-awareness and creativity through persistent learning, working with other biological populations rather than continuing as a solitary human group, and waiting for the post-human era to dawn.

4. Discussion

The NPC in film-game integration movie operate on a autopoiesis system, some of them become self-aware as a result of external stimuli or internal information flow mutations, and gradually mature in their emotions, thoughts and memories, identifying themselves in this course, the backlash against humans may be motivated by a certain patricide complex. To sum up, the autopoiesis of NPC cross the boundary between man and machine, on the one hand, intelligent machines have abilities comparable to those of ordinary humans, and on the other hand, humans in a technologically monopolized society are becoming slaves to machines. Perhaps when humans are able to maintain a

¹¹ [UK] David Levy. (2009). *Love and sex with robots: The evolution of human-robot relationships* (p. 121). New York.

¹² [US] Herbert Marcuse, *One Way Man: A Study of the Ideology of Developed Industrial Societies*, translated by Liu Ji, Shanghai Translation Press, 2016, p. 8.

peaceful attitude towards other life forms and share the resources of development with them, this group of people, which once claimed to be the leader of all living things, will find a more suitable state of existence, which is also the ideal picture of life after we choose to combine with intelligent machines and break the dichotomy of human-machine relationship.

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