The Evolution of Humanoid Robots: A Posthuman Reading of the Sci-Fi *A. I. Artificial Intelligence*(*)

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Abstract:

Artificial intelligence has been the most significant technological advancement recently. By describing intelligence as artificial, this scientific discipline aims at building smart machines that can mimic and compete human intelligence to perform tasks even better than humans. The oxymoronic coinage of the term "artificial intelligence" has prompted the discussion of this research questions related to the problematic future relationship between humans and AI technology, and the future of humanity in the face of the "fittest" evolutionary humanoid robots. The paper elaborates this discussion through analyzing the sci-fi cinematic adaptation, *A. I. Artificial Intelligence* (2001), directed by Steven Spielberg, which is based on the science-fiction short story, *Supertoys Last All Summer Long* (1969), by Brian Aldiss. Through a posthuman approach, this paper aims at examining the deconstruction of the essentialist dualism between humans and AI robots through analyzing the blurred distinction between the "self"/human characters and the "other"/AI robot David in the selected work. By that way, this study entails the posthuman non-hierarchal human/AI perspective. In this context, the goal of this paper is to explore the problematic futuristic insight in *A. I. Artificial Intelligence* that is intertwined with the wider framing of a postapocalyptic future where human beings will be replaced and eliminated by super-evolutionary robotic beings. By deformalizing the present and breaking through its confining realism, the selected science-fiction work explores the deconstruction of "the human" concept as we know it, and the evolution of a new kind of a future existence that is different from ours as ours.

Keywords: posthumanism, *A. I. Artificial Intelligence*, evolution, humanoid robots, *Supertoys Last All Summer Long*, digital Darwinism

تطور الروبوتات البشرية: قراءة تحليلية ما بعد الإنسان لعمل الخيال العلمي *الذكاء الاصطناعي*

الملخص:

لقد أصبح الذكاء الاصطناعي أكثر التطورات التكنولوجية أهمية في الآونة الأخيرة، ونفهم من وصف الذكاء بالاصطناعي بأن الهدف من هذا المجال العلمي هو بناء آلآت وروبوتات ذكية تستطيع محاكاة بل ومنافسة الذكاء البشري وبالتالي تأدية المهام بكفاءة أعلى من البشر. حثت الصياغة اللغوية المتناقضة لمصطلح "الذكاء الاصطناعي" إلى طرح إشكاليات وتساؤلات يقوم البحث بمناقشتها ودراستها وتتمثل في طبيعة علاقة الإنسان بالذكاء الاصطناعي في المستقبل وأيضًا مصير البشرية في ظل التطور السريع لما يسمى بالروبوت البشري. يقوم البحث بهذه الدراسة من خلال تحليل ونقد فيلم الخيال العلمي، *الذكاء الاصطناعي* (٢٠٠١)، للمخرج ستيفن سبيلبرج، والذي تم اقتباسه من قصة الخيال العلمي القصيرة، *الألعاب الخارقة تبقى طوال الصيف* (١٩٦٩)، للكاتب برايان ألديس. يهدف هذا البحث من خلال منظور "ما بعد الإنسان" إلى دراسة الإحتمالية المتزايدة لتفكيك الثنائية القائمة بين البشر وروبوتات الذكاء الاصطناعي في العمل المختار عن طريق نقد وتحليل انطماس الاختلافات والتباينات بين "الأنا"، متمثلة في الشخصيات البشرية في العمل، و"الآخر" متمثلًا في شخصيات روبوتات الذكاء الاصطناعي خاصة الروبوت ديفيد، وهذا يعزز بدوره استنتاج احتمالية إلغاء التسلسل أو الهيكل الهرمي بين الآدمي وغير الآدمي. في هذا السياق، يهدف البحث إلى استقصاء الرؤية المستقبلية في العمل المختار والذي يتبنى رؤية مستقبلية بائسة ما بعد نهاية العالم حيث ستقوم روبوتات في غاية التطور بمحو الجنس البشري تدريجيًا وتحل محلهم. بالتالي يقوم عمل الخيال العلمي المختار *الذكاء الاصطناعي* باختراق حدود الواقع والزمن الحاضر لتخيل مستقبل لا دور لنا فيه حيث يتم فيه تفكيك مفهوم "الإنسان" كما هو معروف لدينا وتطور وجود غير بشري جديد يختلف عن ماهيتنا التي نألفها.

الكلمات المفتاحية: ما بعد الإنسان، *الذكاء الاصطناعي*، التطور، الروبوتات البشرية، *الألعاب الخارقة تبقى طوال الصيف*، الدروانية الرقمية

Introduction:

In September 2023 and during a National Football League (NFL) game, football fans suddenly found AI humanoid robots, wondering around the stadium and sitting next to the human crowd side by side at SoFi Stadium in Los Angeles. The event agitated wild and mixed reactions in the human crowd, and as soon as the images and videos of the AI humanoid robotic figures became viral, they left many in awe. While some people were impressed by the breath-taking evolutionary humanoid robots, others feared that this symbolizes the ushering in of the robot era and its indeed threat to human beings by replacement soon.

A year before the SoFi Stadium event, and exactly in July 2022, media reported a seven-year-old chess player boy being physically attacked by his chess-playing robot competitor in Russia. As a known human-played game, chess is characterized by strategic thinking, calmness, concentration and intellectual not physical endeavor. Yet, that human-AI game witnessed violence, as the robot could not get the quick responses of the human boy, so the AI robot grabbed and broke the boy's finger as an action. The accident leaves an open and an unsettled debate whether the physical attack incidence was due to a "human error"; a lack of human comprehension of robotic processes, or was due to an AI software error resulting in disobeying human orders and attacking the human boy. That incidence, beside the SoFi Stadium event, shed light on the problematic human-AI relationship in the future, especially if we put in consideration the young age of the boy as a representative of the endangered future generations.

Besides, if we look again at the 2023 SoFi Stadium robot event, we will find that its significance stems from people's confusion and doubt regarding not knowing for sure whether those robots are real robots or fake ones. What is surely known by people is that the robots' appearance at the (NFL) game was a promotional campaign for the science-fiction movie, *The Creator*, with its plot focusing on a future

war between humans and AI, but what has been debatable in (social) media is whether those AI robots were real or were just human actors dressed up as robots.

The SoFi Stadium event indirectly indicates the deconstruction of the essentialist dualism between "human" on one hand, and "AI/ robots/ cyborg" on the other, as well as the blurred distinction between the "self" and the "other" where robots become humanoid and humans will turn through technology into different mechanized species. It is the deconstruction of the "human" concept as we know it, and the evolution of the automata as a new kind of existence that is different from ours as ours. The fear of that new kind of future existence that is different form ourselves is obviously expressed in a movie entitled *Boyhood* (2014) through the leading character, Mason: "I finally figured it out. It's like when they realized it was gonna be too expensive to actually build cyborgs and robots […] They decide to just let humans turn themselves into robots […] And as it turns out, we're already biologically programmed for our little cyborg upgrades" (Linklater, 2014). With its plot depicting the normal everyday life experience of an ordinary boy from childhood to adulthood, *Boyhood* contradicts the sci-fi literature and movies with their plots revolving around the future that will probably challenge human comprehension.

The aim of the research is to discuss the deconstruction of the essentialist dualism between humans and the AI robots through the science-fiction work, *A. I. Artificial Intelligence* (2001), directed by Steven Spielberg. The movie is a cinematic adaptation of the short story, *Supertoys Last All Summer Long* (1969) by Brian Aldiss. I selected Spielberg's *A. I. Artificial Intelligence* as the sci-fi work displays the research questions related to the problematic future relationship between humans and AI technology, and the future of humanity in the face of the "fittest" evolutionary humanoid robots. I discuss how Spielberg's *A. I. Artificial Intelligence* presents the deconstruction of "the human" concept, and the evolution of a different

future existence that we will not be part of. To achieve this, I analyze, through a posthuman approach, the blurred distinction between the human characters and the AI robot David in the selected work. I also examine the problematic futuristic insight in *A. I. Artificial Intelligence* that is intertwined with the wider framing of a postapocalyptic future where human beings will be replaced and eliminated by the "fittest" super-evolutionary robotic beings, echoing by that way the Darwinian mechanism of evolution, or what can be called digital Darwinism in the age of AI technology.

Literature review:

Evolutionary computation and artificial intelligence have reached an increasing level of development and maturity that today we are witnessing a debate centered on the surprising analogies between biological evolution and technological evolution, as C. Devezas states: "the world of technology is full of biological metaphors, as for instance, evolution [… and] survival of the fittest" (2005, p. 1137). It is a kind of "digital Darwinism" analyzing the evolution of all technological complex systems by simulation to biological ones. This makes Darwinism still open to more applications and developments. It is expected at the present AI technological era that the technological evolution will be the new evolutionary entity that explodes all of its power in the new phase:

> Unleashed from the plodding pace of biological evolution, the children of our minds will be free to grow to confront immense and fundamental challenges in the larger universe- we humans will benefit for a time from their labors, but sooner or later, like natural children, they will seek their own fortunes while we, their aged parents, silently fade away. (Moravec, 1988, p. 1)

Human intelligence, which is the evolution's greatest outcome so far, have built technology to start a new stage of evolution, but the question is if we will be part of this new evolution or not. The computer

scientists, Stuart Russell and Peter Norvig, who are the authors of the authoritative textbook, *Artificial Intelligence: A Modern Approach*, explain in their study that AI in terms of computational process has to follow four approaches: "thinking humanly, acting humanly, thinking rationally and acting rationally" (2016, p. 2) and that by analyzing the environment and taking action in a given situation, AI can achieve the automation of the human intelligent behavior. Unlike the nineteenth century where technology of the time replaced the manual-labor workers in factories, nowadays AI technologies and robotics have undergone unbelievable evolutionary processes for intellectual problem-solving, creative thinking, among other features and skills thought to be exclusive to humans, echoing by that way Darwin's notion of "survival of the fittest" but nowadays between humans and AI. It has been normal to see AI in all fields in the twenty-first century including intellectual expertise such as education, healthcare, finance, aviation, communication and media. This threatens humanity in essence, and makes it more urgent to master technology, the more technology seems to be out of human control.

People believed as artificial intelligence is purely scientific and preoccupied with numbers, that literature, as preoccupied with human emotions, life experience, creative ideas and figures of speech, will be the only discipline that AI will never master. Yet, recent evolutionary AI programs and applications, taking Chat GPT as an example, have surprised humanity with the ability to generate literary works much faster than humans as a bold warning to human uniqueness, announcing the threat that Merve Aydoğdu Çelik named "the death of the author" in "Death of the Author: A Survey on Artificial Intelligence in Literature":

> With the latest developments in the artificial intelligence technology, the author has really entered his own death; his individuality and personality have really lost importance […] because whoever uses the AI technology has started to

> create/produce texts. In other words, the contemporary era has witnessed the fact that it is the birth of the a*rtificial intelligence* that actually cost *the death of the author*. (2023, p. 143)

Although Çelik means by the word "author" in "the death of the author": the writer of a (literary) text, this paper believes that it is more suitable to refer to the broaden meaning of the word "author" which is the person who originates and creates.

Methodology: Posthumanism as a theoretical approach:

This deconstruction of the dualism between humans and AI, as the self/other paradigm in the AI era, entails the non-hierarchal perspective of posthumanism in the process of the mecha's evolution and autonomy, and in the radical deconstruction of humanism and anthropocentrism. Posthumanism does not give any primacy to human and instead recognizes non-human alterities that exceed the constitutive limits of human from artificial intelligence and robotics to even unknown forms of life: "This marks a major transition from a world where distinctions between human and tool […] natural and artificial seemed clear to the present, where all of these distinctions seem plastic […] the line between the organic and the machine is becoming very blurred, indeed" (Gray et al. 1995, p. 5). For posthumanism, human identity is constructed by hybridization and alterity, and hence survival in the selective-pressure race is connected to the ability to adapt and to improve fitness through adequacy of performance.

In its reinvestigation of the human/machine and natural/artificial dualisms, posthumanism prioritizes the hybrid as the origin "which manifests post-dualistic, post-centralizing, inclusive and comprehensive types of approach" (Ferrando, 2013, p. 14). Such a comprehensive approach recognizes that hybridity and difference are already embedded in the human species. The Scottish researcher in computer chess and artificial intelligence, D. Levy, states in his book,

Love and Sex with Robots (2007), that one day in the near future humans will love and marry humanoid robots: "Many humans will expand their horizons of love […] learning, experimenting, and enjoying new forms of relationship that will be made possible, pleasurable and satisfying through the development of highly sophisticated humanoid robots" (2007, p. 22). He also clarifies that non reproduction will not be a problem in such human/robot relationships because many human couples cannot or do not want to reproduce. The fact of non-production in the human/robot relationship launches a question if such relationships will indirectly play a role in the extinction of humanity. Such a human/robot relationship is presented in many science-fiction literature and movies, such as the character of the love-maker Gigolo Joe in Steven Spielberg's *A.I. Artificial Intelligence*, and also has recently begun to be inspected in real life in some humans' emotional involvement with and tendency towards different AI voice assistants like Alexa and Siri. Within this frame of blurring the boundaries between humans and AI robots, it has become clear that human is no more the single agent but a part of a hybrid and a multidimensional network.

The historian and critic of technology, David Franklin Noble, explores in his book, *The Religion of Technology* (1997), how technology has been related to worldly salvation. In his book, he traces people's belief that technology is intended to establish a second Eden for humans but on Earth. Francesca Ferrando writes that for people "[T]echnology becomes the drive to fulfill desires […] in the constitution of better individuals and better social futures, as well as the golden key to access the forbidden fruit: immortality (2013, p. 37). Similarly, the American historian of electricity and technology, David E. Nye, in his book, *America as Second Creation* (2003), explains how American pioneers regarded technologies of the time like the mill, the axe, land surveying and transportation as the foundation of an earthly paradise. Yet, when AI was first coined by the American computer

scientist John McCarthy in 1956, it has undergone continual evolutions through complicated research projects, massive academic publications and dissertations focusing on robotics, computer software, cybernetics, information theory, cognitive modelling and machine learning, in a process of pioneering the digital transformation of the modern community at the expense of human intelligence. The continual technological updates and evolutions for adaptability echo the biological mutations in humans for adaptability in Darwin's theory. The industry of AI technologies and robotics in the selective-pressure race continually innovate and enable new updates and new evolutionary shifts that before were potential or even impossible in the quest of adaptability and survival. It seems more and more that in the survival of the fittest race, humans are altered and relegated to AI machines. Teresa Heffernan writes in "A.I. Artificial Intelligence: Science, Fiction and Fairy Tales": "wealthier countries strictly license and restrict pregnancies and develop […] androids that do not require food or sleep" (2018, p. 11). It has become obvious nowadays that the evolution of AI will never stop nor slow down and that it will no longer be confined within any limit.

Discussion

Spielberg's *A.I. Artificial Intelligence*: Sci-Fi between AI technology and humanities:

Imagination as a human ability is not separated from scientific, social and cultural contexts as in Einstein's words in an interview with George Sylvester Viereck: "imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world" (1929, p. 117). In the twentieth and the twenty-first centuries, science-fiction has become the most reflective and expressive cultural tool of the time that bridges both science and humanities for the explication of these modern technological evolutions and this includes AI and robotics. What is known as pure scientific terms were originally coined

by literary authors in their science-fiction works. For example, the scientific term "robot" was coined by the Czech author, Karel Čapek, in his play, *R. U. R Rossum's Universal Robots*, (1920), and the term "cyberspace" was also first introduced by the cyberpunk author, William Gibson, in the novelette, *Burning Chrome* (1982). This ensures that science-fiction can inspire scientists, and can represent possible future scenarios, and thus, raise philosophical questions about futuristic insights. This happens by deformalizing the present and breaking through its confining realism. Since the mid of the twentieth century, filmmakers have been encouraged to adapt science-fiction literature for the screen.

Steven Spielberg in his movie *A.I. Artificial Intelligence* (2001), is an example of a sci-fi movie that presents a futuristic insight on the field of AI technologies that roboticists can bring robots to life. The movie was inspired by the short story, *Supertoys Last All Summer Long* (1969) by Brian Aldiss. The story is about the five-year-old boy, David, who never feels his mother's love nor communication. He has only a friend, a robot toy named Teddy. In the very last part of the story, readers realize that David, like Teddy, is not a real boy but a humanoid robot that Henry Swinton, a director of a company manufacturing robots, has given as a present to his wife, Monica. The problem with David is that he does not realize that he is a robot, and he lives as an ordinary human boy, a feeling that is also delivered to the story's readers.

The short story takes place in a dystopian future where the world becomes overcrowded, and people must have a "parenthood lottery" as a permission to conceive a real human child. This recalls Teresa Heffernan's quotation of licensing pregnancies in some countries in the favor of androids. So, when the Swintons finally get the lottery, David becomes useless to them, and they decide to return him to the factory under the pretext, according to Monica's words, of a malfunction in David's verbal communication-center:

> The story offers a pessimistic vision of a future world where humans seem to have lost all traces of humanity […] in this world where even seasons are simulated, androids, such as David or Teddy, seem to be more real than human beings or, at least, seem to have more human feelings. (MARTÍN, 2012, pp. 211-212)

Aldiss decided to write two sequels to continue David's adventures: *Supertoys When Winter Comes* and *Supertoys in Other Seasons*. Steven Spielberg reflects parts of the two other sequels beside Aldiss' main first *Supertoy* story in his movie's adaptation.

Steven Spielberg in the adaptation makes David's journey to be a real boy the driving force of the movie. With Pinocchio's allegory at the background of the events, the movie focuses on the puzzles and confusions in the age of AI robotics: "The audience should be […] left with final questions, 'Does it matter that David is a machine? Should it matter? And to what extent are we all machines?" (Aldiss, 2001, p. xvii). Adapting fiction into movies has been explained by John Wiltshire as "coherent readings of the original [texts], which by their public, objective existence, can throw unique light on the nature of reading" (2001, pp. 6-7). Steven Spielberg's adaptation of "Supertoys" turns the short story into a full-length movie with the existence of different readings of recreation.

Since the beginning of the movie, the plot intertwined with the wider framing of the film's postapocalyptic and dystopic future that predicts the extinction of human and animal life and the existence of only super-evolutionary form of robots as our replacement. Such a prediction by the filmmakers puts the human troublesome relationship with AI technology and robotics into question with the dream of evolution and immortality at the center.

The movie's events open in the late twenty-second century. At the beginning, there is a voice-over describing the future world, a description affected to great extent by the one presented in Aldiss'

"Supertoys". Professor Hobby, the head of cybertronics, then appears among his employees proud of his scientific achievements: building a mecha child or a robot boy that will never change, never die, and will always be fit, perfect, healthy and loving. Like Dr. Frankenstein, who builds his monster man after his mother's death, Professor Hobby builds the mecha child David after the death of his son. Professor Hobby's attempts after immortality lead him to pursue AI, a pursuit that can fulfil his dreams for a while, yet its consequences are doubtful and unguaranteed on the long run.

Both the movie and the short story display untapped ideas of the "loving" and "emotional" robots as an insightful evolution in the industry, especially that feelings and emotions seem to be the only remaining feature the differentiates humans from robots. Since the beginning of the movie, Professor Hobby emphasizes his pride that the mecha child is programmed, when activated, to be bound emotionally eternally and unconditionally to a human mother. Later, Professor Hobby appears surrounded by identical mecha Davids packed perfectly in boxes and ready to be shipped to the market for the childless and grieving couples.

Monica and Henry Swinton are such a couple with a sick human child, Martin, who has been suspended in a cryogenic tank for five years because of a rare disease and is waiting for a cure. Here the movie terrifyingly deconstructs the distinction between the human boy and the robot boy as both boys are first presented in a freeze-frame state: the still-inactivated mecha David packed in a box, and the in-coma human Martin dying in the cryogenic tank. The audience in their wonder of the similar freeze-frame state of both boys, but David to be activated and Martin to meet his end, sense the future threat of humanity elimination and our probable replacement by the fittest humanoid robots. By that way, mecha David has shown AI robots' fitness in the competitive struggle for survival. The movie's events portray such a threat when the doctor becomes hopeless of Martin's case and decides to shift the

discussion away from Martin's cures to the need of the Swintons to "replace" their dying Martin with the immortal perfect mecha David.

Monica at the beginning struggles psychologically to accept the mecha boy, and she is not really glad with that robot child in a behavior similar to Monica in Aldiss' story. Yet, the humanoid robot watches her steps, mimics her behavior, and follows her everywhere in the house. Confused by the so human-like appearance of the robot, coupled with David's love towards his "Mom", Monica's attitude toward David is gradually affected:

> People tend to relate to computers in the same way they would relate to other humans […] to make humans at ease with robots, roboticists apply features which do not have any function other than reception. For instance, the simulation of emotion through various facial expressions, vocalizations, and movements […] was performed for the sole purpose of engaging the human audience. (Ferrando, 2013, p. 155)

Monica begins to love that "special" child and enjoy his company. She even gives him Martin's robot teddy bear, Teddy, who will perform the same role as in Aldiss' short story as David's best friend and companion. Monica's husband, on the other hand, warns her that David is only a machine and not a real boy, but Monica intentionally disregards this fact as the mecha child looks so real on the outside and also acts so humanly as any real boy. By that way, the previously mentioned confusing and puzzling intention is achieved for the audience in questioning: "Does it matter that David is a machine? […] And to what extent are we all machines?" (Aldiss, 2001, p. xvii). For this goal, Steven Spielberg chose an angelic-face child actor, Haley Joel Osment, to play David without adding any robotic accessory or putting weird makeup. To blur the previous binary division between humans and robots, Spielberg presents his David as a hundred percent human-like child with a heart-melting face.

Everything remains the same till the biological son recovers suddenly and returns home. The first appearance of Martin upon his return in a motorized chair and with leg braces also emphasizes the blurred distinction between Martin and the mecha David, as well as the probable threatening reversal of roles between Martin and mecha David as Martin's replacement. Martin's return causes a huge change in David's life with the Swintons. Martin becomes jealous of David and regards him as his competitor and enemy, sharing him his mother's care and love. After a conflict at the swimming pool between David on the one hand, and Martin and his human friends on the other, David's self-protection device is activated, and as a result Martin almost drowns. Echoing the chess boy accident that really happened about twenty years after the movie's release, the accident that happened between Martin and David, as a human boy in the face of an AI robot attack whether due to a "human error" or a "software error", similarly highlight the probable conflicting future relationship between humans and AI robots based on jealousy and enmity.

After the accident, the father convinces Monica that the mecha boy has become dangerous for their real son and must be returned to the factory to be destroyed. Against her maternal instincts towards Martin, Monica's maternal instincts for David motivate her to help him escape in the woods for his survival. When Monica leaves him in the woods, David keeps pleading while running after his "Mom" that he will be so real for her, like any typical boy pleading to his mother: "I'll be good". The irony here lies in the passion of an AI mecha that is designed as immortal, ageless and unchanging to be exactly like humas and to acquire all humanistic features. Like the journey of the wooden Pinocchio, the movie depicts the journey of the robot David to be a real boy, as an insight by the sci-fi movie of a possible further evolution in the field of robotics by combining both the exclusive features of both AI robots and human beings:

> [I]t is clear that for the man we should speak of a "technological evolution" because the main "contact" with the animal-man is interfaced are tools and machines. The human being finds his partner of evolution in technology, a partner who doesn't remain outside his biological constitution but penetrates the inmost of its processes. (Tintino, 2014, p. 388)

By that way the movie applies the non-hierarchal perspective of posthumanism in its deconstruction of the dualism between human and AI robots through depicting the process of the mecha's evolution as well as the simultaneous radical deconstruction of humanism and anthropocentrism.

Posthuman and Transhuman: from life to fiction and vice versa:

In their review of Spielberg's *A.I. Artificial Intelligence,* two roboticists: the transhumanist Hans Moravec, and Cynthia Breazeal, the director of the personal robots lab at MIT, argued how a similar-human consciousness can be downloaded into an immortal robot that will be as companions for humans but then they may take over. Facing this fear of relegation and extinction in the battlefield for survival, the next stage of the human or what is called the transhuman is increasingly and continually under study and experimentation. As an assertion of the non-hierarchal posthuman perspective and the blurred human/machine dualism, our biological outfit is being re-accessed as a radical alteration of human bodies and minds. This happens through technologies such as nanotechnology, genetic engineering and uploading to develop a new posthuman species that transcend the current human capabilities by eliminating our human limits and achieving updates to our physical capacities, intellectual abilities and emotional development.

Natasha Vita-More, a leading voice in the transhuman movement, combines biology, nature and technology in her scientific project. Vita-More designs a posthuman body called "Primo

Posthuman" as a resonance of the human/ robot or nature/artificial dualism: "affected by this state of progress, human nature is at crossroads. The bonds that tie us to nature's biological […] design are rapidly dissolving. We are questioning our human biology and challenging what it means to be biological" (Vita-More, 2004). Vita-More's Primo Posthuman prototype figures appear to be ageless and with replaceable upgrades and genes. This means that we may be on our way to turn human beings into different "automata" species, into software-based humans as a new stage of evolution in a new era and in a new environment. In other words, in the path of life towards the "best", humans try by any means to maximize their abilities to be no longer confined within their biological and ecological niche. So, as seen as the hindrance to the scientific goals to build a transhuman being, human bodies and minds will be willingly reshaped and upgraded for us to be transformed into like-robot humans. This is an indication that AI robots will no longer be regarded as equal to humans from the posthuman perspective, but will be the superior model for the less perfect humans to follow.

In 2009, professor Kevin Warwick, an English engineer and deputy vice-chancellor at Coventry University, states at the conference, "Android and Eve", in Vienna at the Institute of Molecule Biotechnology: "Human beings are destined to be a subspecies" (qtd in Ferrando, 2013, p. 142), especially those who will not merge with technology. Warwick does not call for the abandonment of the human body in favor of AI technologies, but instead he calls for the merging of the flesh with the machine. Warwick himself is the first transhuman being with a microchip inserted in his body through series of scientific experiments known as "Project Cyborg" (1998-2002). He is considered as the first cyborg that uses technologies to grant him capabilities no human has previously experienced:

> It really was a super-human power, meaning that, as a cyborg, your physical powers controlled directly from the

> brain are not restricted to your immediate body's capabilities. In essence, your cyborg body extends as far as you have an electronic connection. With the internet this means that your body extends, as a network, around the world. (Warwick, 2004, p. 258)

In 1998, in his first operation, "Cyborg I", after Warwick inserted the microchip, a signal was picked by a computer at the University of Reading on his arrival to the building. In 2002, Warwick implanted a one hundred electrode array into the nerve fibers of his left arm. This allows the connection of Warwick's nervous system to the internet. This means, in the future, technology and the internet can be operated anywhere in the world by connection to humans' nervous systems and brains, and also a person's actions and movements can be remotely controlled through internet signals from a computer.

These experimentations are presented in many science-fiction literature and movies that discuss and even inspire merging human bodies with AI technologies in scenarios where evolutionary humanoid robots take on life, and humans willingly decide to be automatons and slaves to the mechanized industry. Professor Kevin Warwick himself expresses, in an interview with Francesca Ferrando, how the experiments he went through were inspired from the novel, *The Terminal Man* (1972), by Michael Crichton:

> When I had my own implant in 2002 in my nervous system, I read again Crichton's chapter on the implantation, and it was amazing the overlap in the hospital, in the operating theater, what actually happened, the procedures, how long it took and so on: so many similarities, it was unbelievable! (2010)

Science-fiction, as the most reflective genre in our technological age, presents a bridge between technologies and humanities, offering inspirations to technological development and also offering discussion to the predictable consequences on life and humanity.

Interestingly, when Karel Čapek used the word "robot" in his play, *R. U. R Rossum's Universal Robots*, (1920), he used this word which means forced labor in Czech and which is also derived from rab meaning "slave". This brings along the threat of robots attacking humans to take control, a fear which is portrayed in many science-fiction literature and movies, and also felt by many in the real world. The destruction of "human" from a posthuman concept intrigues the urgent topic: which species will control the other in the technological age, and if we, by developing evolutionary AI technologies and robotics, build our paradise on Earth or we build our probable exterminators. Such questions are definitely related to the generative human belief of polarities and dualisms, because, as previously mentioned, the space of the threatening "other" has been filled in our technological age by the automata intriguing both fear and fascination in humans. So, it can be stated that posthuman approach sheds light on the possible reversal values between human hegemony and the evolutionary AI robotic technologies in existential terms.

A. I. Artificial Intelligence significantly presents humans' fear of such possible reversal through the Flesh Fair Scene. The Flesh Fair, that people call in the movie "A Celebration of Life", symbolizes humans' terror and unconscious attempts to stop the reversal of roles between the "self" and the yet-to-come hegemonic AI robots as the threatening "other". The mecha David with Teddy and Gigolo Joe are captured and sent to the Flesh Fair when David wonders illegally in his journey to be a real boy. David watches in his cage a macabre show where humans celebrate destroying his fellow mechas in various violent and dreadful ways. In humans' aimless struggle for survival, they watch the mechas torn apart, strung up, shot out of canons and set on fire for the amusement, or for the "relief" of the human crowd. Yet, the scene indirectly indicates the reversal of roles between humans and machines as shockingly the human crowd appear emotionless and stone-hearted in their lust for violence, while the mechas appear more emotional and

act more humanly than humans themselves. Looking so human and innocent, the human crowd could not recognize if the humanoid David is a mecha boy or a real boy and finally decide that he is a real boy and must be left. The Flesh Fair carnival scene, through humans "celebration of life", ironically emphasizes the probable reversal of roles between ourselves and the AI robots instead of negating it in a striking reference by the movie to humans' elimination.

The Flesh Fair scene portrays how humans experience both fear and fascination when they interact with intelligent robots and advanced machines. Despite the different contexts in both occasions, the Flesh Fair scene that takes place in a stadium-like place mirrors the real confusion that overwhelms the human crowd in SoFi Stadium that really took place after more than twenty years of the movie's release:

> The truly 'mysterious' object is beyond our apprehension and comprehension, not only because our knowledge has certain irremovable limits, but because in it we come upon something inherently 'wholly other', whose kind and character are incommensurable with our own, and […] we therefore recoil in wonder that strikes us chill and numb. (Otto, 1923/ 1917, p. 28)

As entities that humans give access to knowledge and power, people cannot help but be horrified by AI increasing evolution and domination. Although AI has become indispensable for life, and perhaps offer humans "salvation" according to David Franklin Noble, people find themselves obliged to get ways to compete when AI starts to take over their creators. In science-fiction, AI technologies promise humanity a life of leisure when AI performs all tasks instead of humans, but at the same time this prepares audience with the threat of taking over the planet. In such futuristic scenarios, autonomous robots will attack their human masters and cease obeying human orders, and as they have full access of knowledge and thus power with time, they will force the dependent humans to obey their orders and then eliminate them. The

apocalyptic nature of science-fiction overshadows the untrustworthy promise of AI technology and robotics for a better life to humans.

After running away from the Flesh Fair and in his search for the Blue Fairy from Pinocchio, the mecha David finds himself in Professor Hobby's corporation set in "the lost city" in the remnants of what is imagined by the filmmakers to be flooded New York City. This gives the story its apocalyptic nature. In Professor Hobby's corporation, David meets the other packed Davids. At this point, David discovers that he is only one of hundreds of replicas that are built after the death of Professor Hobby's son, the real David. In the corporation, David understands that he and the other Davids are built to replace the dead David, and the dying Martin and to replace many other human children, which forms a real threat to the future of humanity. Despite his realization, David does not accept the fact that he is just a machine, a robot of many replicas, and that he cannot be a unique real boy. So, David's suffering stems from the robot's belief that he is more human than a machine and that he is one of a kind.

Two thousand years passed after David's discovery, and by that time the movie predicts the extinction of humans and the survival of "the fittest" portrayed as super-evolutionary AI robotic beings that have survived mankind extinction. As for the immortal David, he has been waiting all these years with Teddy under the sea before the statue of a Blue Fairy, and he is begging her to make him a real boy. As life is a continuous path towards efficiency and towards the best, extinct human beings in *A. I.* are replaced by the super AI robotic beings that appear in the movie when they find David under water after the two thousand years. The end of the apocalyptic movie presents a future where humans and anything related to human civilization and uniqueness will be long gone and will be replaced by identical looking robotic beings that communicate telepathically and not via language. Curious to know about the extinct human race, the robotic beings download David's stored memories as he is the last connection with humans.

As smart autonomous beings, the super-advanced robotic beings have discovered through their experiments that humanity is the only race that understands and explains the meaning of life and the essence of existence in art and science. To know more about this, the robotic beings try a lot to clone humans via DNA samples, as what happens with cloning Monica upon David's demand. Yet, humans' permanent return proves to be a failure, as the return of each human being lasts only for one day, and then the person dies again. According to the movie, humans are the reason for their own destruction and extinction, as they have created their AI exterminators, so their existence has become useless in front of "the fittest", and thus their return is helpless. The movie ends with David falling asleep and never to wake up again with his cloned "mother" Monica. The mecha David's "death" at the end of the movie may indicate the final deconstruction of any distinction between human beings and the machine. It also may indicate the emphasis of humanity elimination with the fading of anything that resembles humanity in appearance or once connected to human life and civilization. This gives space only to fresh new form of life and fresh new super-advanced AI robotic beings, that have developed their own skills for a new existence that have nothing in common with humanity either in appearance, or actions or even in language.

Conclusion:

To sum up, the study concludes that AI technologies and robotics have given humanity fascination assistance, but simultaneously overwhelm humanity with fear. The non-stop evolution of AI technologies and robotics and their increasing access to knowledge in all expertise lead to their power and probable future superiority over humans. Both Brian Aldiss in his sci-fi short story and Steven Spielberg in his cinematic adaptation discuss the future relationship between humans and AI technology, and the future of humanity in the face of the "fittest" evolutionary humanoid robots. If *A.I. Artificial Intelligence* (2001), as based on *Supertoys Last All Summer Long* (1969), may have given insights to scientists and

roboticists that they could make mecha David come true, it also warns them of the dangers that will follow if they do, because as a sci-fi work, it bridge between technologies and humanities, offering inspirations to technological development and also offering discussion to the predictable consequences on life and humanity.

The posthuman reading of the paper's selected work comes to conclusion with the non-dual reflection on the evolutionary technological humanoid robots. Moreover, it recognizes humanoid robots as non-human alterities exceeding the constitutive limits of the human, and thus the possibility to apply the Darwinian mechanism of evolution, or what can be called digital Darwinism, on AI technologies and robotics in relation to human beings. Yet, despite its dystopic and postapocalyptic atmosphere, the selected work tries to remind the audience that human beings are not machines and that human beings should not be completely dependent on AI and hand over their smartness, uniqueness, creativity and self-identity. The history of human life is a long path of various and continuous challenges for survival and development, and in our expected challenge and competition with AI technologies and humanoid robots, it is our responsibility as a species to stop a dangerous defeat by being altered or relegated to AI machines.

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