UTOPIAN FUTURE WITH ARTIFICIAL INTELLIGENCE AND SUPERINTELLIGENCE: A COMPARATIVE ANALYSIS OF MAX TEGMARK'S *LIFE 3.0: BEING HUMAN IN THE AGE OF ARTIFICIAL INTELLIGENCE* AND JAMES LOVELOCK'S *NOVACENE: THE COMING AGE OF HYPERINTELLIGENCE*

Raman & Priyanka Mahajan *

Abstract: The evolution of global technological advances such as Artificial Intelligence (AI) has witnessed an incessant and determining impact on society. The posthuman concepts of Superintelligence or cyborgs are emerging as the subjects of solid fascination in academics and research. This research paper establishes literature as a promising platform to highlight the utopian future with AI and Superintelligence, ensuring their responsible and beneficial deployment. Through a comparative critique of two influential contemporary works, Life 3.0: Being Human in the Age of Artificial Intelligence (2017) by Max Tegmark and Novacene: The Coming Age of Hyperintelligence (2019) by James Lovelock, our study critically enquires into the positive effects, myths, threats, aftermath scenarios, mitigations associated with AI and Superintelligence. The study's outcome lies in its contribution towards the extension of critical literature and acceleration of future research in the applications of these technologies in humanities.

Introduction

Technology's rapid growth and development have influenced and transformed almost every facet of human life, including the economy, politics, ecology, transportation, health, research, and productivity of 21st-century society. "It has been recognized that AI or Artificial Intelligence had made people's lives increasingly more productive day after day by powering multiple services and programs, which will be helping people to do daily things" (Reddy, 2016, 910). It is worthwhile to mention here that in the post-pandemic era, the human race has seen even an accelerated adoption of AI across every domain of life. Because of its positive breakthroughs in the automation of hardware and software, posthuman concepts, including superintelligence, cyborgs, and hyperintelligence, are expanding. While ASI is still in its early stages, current AI developments will undoubtedly provide the groundwork for more sophisticated AI systems in the future. It has become an area under discussion in academia and the research community because "Just 70 years ago, researchers wondered if a machine could ever think for itself. Over time, the question was changed to whether it could come to think by being manipulated by physical symbols sensitive to the structure that they had" (Fernández-López, 2010). In recent years, literature has emerged as a valuable platform for analyzing the aims, perspectives, capabilities, and future implications of modern and postmodern technologies of AI and Superintelligence and its contribution towards the extension of critical literature and

* Dr. RAMAN, Department of Humanities Languages and Cultural Studies, I.K. Gujral Punjab Technical University, India. Email: kramanpreet360@gmail.com. Dr. PRIYANKA MAHAJAN, Assistant Professor (English), Department of Humanities Languages and Cultural Studies, I.K. Gujral Punjab Technical University, India. Email: priyanka@ptu.ac.in.

acceleration of future research in the applications of these technologies in humanities. By examining these themes, researchers and scholars can have a deeper understanding of technology's societal, ethical, and cultural implications.

I. AI and Superintelligence

Before delving deeper into the concepts of AI and superintelligence, it is essential to understand what "Intelligence" means. *Cambridge International Dictionary of English* defines 'Intelligence' as: "the ability to understand and learn and make judgements or have opinions that are based on reason" (Procter, 1996, 739). There are two categories of Intelligence- Narrow and Broad Intelligence. The crucial distinction between the two is that Artificial Intelligence is Narrow Intelligence in the context of accomplishing "narrow goals." On the other hand, human intelligence is broad intelligence that can accomplish "broader goals." The "goals" here mean learning and acquiring skills, problem-solving, self-awareness, understanding, etc. It refers to a broad area of computer science that focuses on data and analytics and describes a device's or program's capacity to learn, apply knowledge, and "think" or "act" like a human.

The term Artificial Intelligence (AI) has developed into a highly complex field in computer science. It was coined by American Computer Scientist John McCarthy with his fellow researchers in 1955, and he defined it as "making a machine behave in ways that would be called intelligent if a human were so behaving" (McCarthy et al., 2006, 11). In other words, it is a non-biological Intelligence as the *Pocket Oxford Dictionary* defines AI as: "use of computers for tasks normally regarded as needing human intelligence" (Fowler and Francis George Fowler, 1996, 41). Whereas Nick Bostrom (2014), a Swedish Philosopher, coined the term 'Superintelligence' and defined it as "any intellect that greatly exceeds the cognitive performance of humans in virtually all domains of interest" (Bostrom, 2014, 39). As per several technological researchers, humans will evolve or directly reconfigure their biology to accomplish remarkably greater intelligence called "Cyborgs." Manfred Clybes and Nathan Kline coined the term "cyborg" in 1960, and "it refers to a cybernetic organism: an organism as self-sufficient as one of us but made of engineered materials" (Lovelock, 2019, 30). *Encyclopaedia Britannicade defines Cyborg as* "a human being whose physiological functions are aided or enhanced by artificial means such as biochemical or electronic modifications to the body" (Heckathorne, 2019). Donna Haraway, in her essay "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century" (1991), formed the theoretical conception of Cyborg and defined it as: "The cyborg is a condensed image of both imagination and material reality, the two joined centres structuring any possibility of historical transformation" (Haraway, 1991, 7).

Artificial intelligence (AI) and superintelligence (SI) are not just technologies but also popular themes in various forms of literature, including science fiction, speculative fiction, and philosophical literature. For instance, in Isaac Asimov's *I, Robot*, robots with advanced AI capabilities coexist with humans, leading to questions about their rights and freedoms. In contrast, in William Gibson's *Neuromancer*, a superintelligence named Wintermute seeks to achieve self-awareness and gain control over human society. Similarly, in Philip K. Dick's *Do Androids Dream of Electric Sheep?* (1968) explores the concept of androids that are so advanced that they are indistinguishable from humans. The novel raises questions about the nature of humanity and the ethical implications of creating beings that are similar to humans. In speculative fiction, AI and SI are often used to explore alternative realities or dystopian futures. In Margaret Atwood's *The Handmaid's*

Tale, a society is controlled by a theocratic government that uses AI to monitor and control its citizens. In Colson Whitehead's *Zone One*, a zombie apocalypse is caused by a failed military AI experiment. In the philosophical literature, AI and SI are used to explore questions about the nature of Consciousness, free will, and the human condition. For instance, in Daniel Dennett's *Consciousness Explained*, AI is used to understand the nature of Consciousness better. Ray Kurzweil, in The Singularity, is Near (2005), argues that the development of super AI will lead to a technological singularity, where the technological process accelerates at an unprecedented rate and will lead to a merging of human and machine intelligence, thus ultimately leading to a post-human era.

These representations provide insight into how different cultures and audiences perceive and understand these technologies and how literature can inform and shape the development of these technologies. Further research is needed to better understand the impact of these representations on public perceptions of AI and SI as The Select Committee on Artificial Intelligence in their report of the session (2017-19) remarks:

> The representation of artificial intelligence in popular culture is light years away from the often more complex and mundane reality. Based on representations in popular culture and the media, the non-specialist would be forgiven for picturing AI as a humanoid robot (with or without murderous intentions), or at the very least a highly intelligent, disembodied voice able to assist seamlessly with a range of tasks...this is not a true reflection of its present capability, and grappling with the pervasive yet often opaque nature of artificial intelligence is becoming increasingly necessary for an informed society. (House of Lords, 2018, 22)

The present paper explores the "Utopian" future that Max Tegmark and James Lovelock envisioned with Artificial Intelligence and Superintelligence in their respective contemporary works. To begin with, it is crucial to understand the term "Utopia, " which Thomas More coined in his work *Utopia* (1516). It means "a 'nowhere land,' some happy island far away, where perfect social relations prevail, and human beings, living under an immaculate constitution and a faultless government, enjoy a simple and happy existence, free from turmoil, harassing cares, and endless worries of actual life" (Kaufmann, 2013, 6). Max Tegmark, a Swedish- American Cosmologist, Physicist, and Machine learning researcher, in his book *Life 3.0: Being Human in the Age of Artificial Intelligence* (2017), highlights the broader implications and biological advancement of the human race with artificial intelligence and superintelligence. He used the term "intelligence" in a wider sense as the "ability to accomplish complex goals... since understanding, self-awareness, problem-solving, learning, etc. are all examples of complex goals that one might have" (Tegmark, 2017, 71). He commences his book with the fictional but plausible tale of The Omega Team, a group of talented researchers working for a corporation who secretly developed the AI "Prometheus" out of a conviction to help humanity. With the help of strict security measures, this superintelligent Prometheus overcomes the world. It transforms it for the better by eradicating all prior national power structures, establishing an international alliance, and consolidating a single global power that rules the planet. The end-of-state conflict raises the standard of living for everyone on the earth and paves the way for life to continue thriving in the future through the cosmos. At present, the utopian and dystopian scenarios of AI and Superintelligence are the subjects of lively debate among researchers. This seminal work of Tegmark (2017) could be seen as: "a challenge for humans interested in the future of life, intelligence, and consciousness, a challenge on how to create a benevolent future civilization of humans merged with possibly even greater intelligence than our own" (Saftic, 2018, 516).

James Lovelock, a British independent scientist, environmentalist, futurist, and the originator of "Gaia Theory," has co-authored Novacene: The Coming Age of Hyperintelligence (2019) with Bryon Appleyard. Lovelock's central argument in this work is that a new age of hyperintelligent agents, "Cyborgs" from existing Artificial Intelligence, and humanity will enter into a new geographical age that he calls "Novacene." The future vision in his work is thought-provoking and engaging, as a researcher remarks: "We may find Lovelock's argument about Novacene a bit too nebulous, too stretched to be taken seriously. However, the core of his ideas is solid...and what about the cyborgs of Novacene? Only the future will tell, so we should worry more about the AI systems we are deploying now" (Krzanowski, 2021, 199).

Though ample research is available on AI or Superintelligence, no prior research has presented a comprehensive comparative analysis of these acclaimed works. This paper, through a comparative critique of both works, highlights the biological advancement of humanity that may happen in upcoming years, the positive impacts of AI on human enterprise and society, misconceptions, threats of AI, mitigation of risks, possible aftermath scenarios, and utopian vision of future for humanity envisioned through AI, Super AI, and Cyborgs.

II. Future Development of AI and Superintelligence

In the beginning, Tegmark briefly summarises 13.8 billion years of cosmic history of the universe as how our universe expanded and cooled down and life had arrived. Lovelock (2019) also considers the cosmic history of the universe as he asserts: "I find it deeply moving to consider how, from its origin at the Big Bang, our universe was formed–first...over another 4 billion years, chance and necessity led to the evolution of animals and, eventually, humans" (Lovelock, 2019, 28). He denies the existence of "aliens" but for him "It is difficult to believe we are alone in a cosmos which contains perhaps 2 trillion galaxies, each containing 100 billion stars" (11). Rather he believes in the existence of an artificial intelligence race, "there have been or are highly intelligent species on at least one of the quadrillions of other planets that must orbit these stars" (11). Tegmark also holds the same view "Indeed, I think that this assumption that we're not alone in our Universe is not only dangerous but also probably false" (Tegmark, 2017, 313). Lovelock argues that the human race feels supremacy over the prime and unique 'understanders' of the cosmos and their consciousness. However, this supremacy will soon end with the development of a new Intelligence race.

Tegmark (2017) overviews the development of 'intelligence' by classifying life forms into three levels – *Life 1.0, Life 2.0, and Life 3.0.* He defines- *Life 1.0* (biological stage) as "where both the hardware and software are evolved rather than designed" (41) and Life 2.0 (cultural stage) as "whose hardware is evolved, but whose software is designed" (41). The hardware here means "made of atoms" and software is "the algorithms and knowledge that you use to process the information from your sense and decide what to do-everything from the ability to recognize your friends when you see them to your ability to walk, read, write, calculate, sing and tell jokes" (40). *Life 1.0* are bacteria, humans are *Life 2.0* and *Life 2.0,* i.e., humans are dominating the planet because of their ability to design its software. But Tegmark holds the view: "yet despite the most powerful technologies we have today...none can live for a million years, memorize all of Wikipedia, understand all known science or enjoy spaceflight without a spacecraft...all this requires life to undergo a final upgrade, to Life 3.0, which can design not only its software but also its hardware" (41). Thus, *Life 3.0* (technological stage) can design its hardware and software both and

"may arrive during the coming century, perhaps even during our lifetime, spawned by progress in AI" (42).

To endow with complete consideration of the "Novacene," Lovelock (2019) gives an overview of the present age of the "Anthropocene." Eugene Stoermer, an ecologist, coined this term in the early 1980s to describe the effects of the Industrial Revolution and "the domination of human power over the entirety of the planet" (36). The cities have been the most magnificent development of the Anthropocene because, at present, about 90 percent of the world's population lives in cities. There has been a contemporary debate over the Anthropocene, whether it is good or bad; according to Lovelock (2019): "the evidence that it is bad is strong – warming and therefore weakening of the planet, more lethal and destructive warfare, species loss, and so on. Much of this can be attributed to the bewilderingly rapid growth of the human population" (59). But the Environmentalist Mark Lynas remarks that the Anthropocene could turn out to be good as "a good Anthropocene demands that humans use their growing social, economic and technological powers to make life better for people, to stabilize the climate, and protect the natural world" (59). For Lovelock (2019) now there is a critical moment "when the Anthropocene gives way to the Novacene" (65). In his view, the human supremacy about consciousness and unique understanders is rapidly coming to an end with 'new understanders' that he chooses to call 'Cyborgs': "that will have designed and built themselves from the artificial intelligence systems we have already constructed. These will soon become thousands then millions of times more intelligent than us" (30). Lovelock claims that this new intelligence race will rise like us from Darwinian evolution; initially, they will need us, and there is no need to fear them. Tegmark (2017) also remarks, "Indeed, the temptation of technological enhancement is already so strong that many humans have eyeglasses, hearing aids, pacemakers, and prosthetic limbs, as well as medicinal molecules circulating in their bloodstreams. Some teenagers appear to be permanently attached to their smartphones" (198). Lovelock (2019) called this age of cyborgs "Novacene." "This is the age I call the Novacene. I'm sure that one day a more appropriate name will be chosen, something more imaginative, but for now I'm using 'Novacene' to describe what could be one of the most crucial periods in the history of our planet and perhaps even of the cosmos" (31).

III. Utopian Vision with AI or Superintelligence

In the contemporary scenario, the controversies about AI, Superintelligence, or Hyperintelligence have centered around, as Tegmark (2017) asserts, "When and what? When (if ever) will it happen, and what will it mean for humanity?" (43). While considering all such questions, he has presented a utopian vision of AI through the depiction of the positive impact of AI on each sector of human enterprise, such as in space exploration "future AI may help us explore other solar systems and galaxies" (125). In the finance system "Progress in AI is likely to offer great future profit opportunities from financial trading" (127). The future progress of AI will have a positive impact in the field of transportation, as: "it's widely believed that AI-powered self-driving cars can eliminate at least 90% of road deaths, and this optimism is fueling great progress toward actually getting self-driving cars out on the roads. Elon Musk envisions that future self-driving cars will not only be safer but will also earn money for their owners while they're not needed, by competing with Uber and Lyf" (130). In the case of power generation and distribution, "Future AI progress is likely to make the "smart grid" even smarter, to optimally adapt to changing supply and demand even down to the level of individual rooftop solar panels and home-battery systems" (132).

In healthcare, "If machine learning can help reveal relationships between genes, diseases and treatment responses, it could revolutionize personalized medicine, make farm animals healthier and enable more resilient crops" (133), and in the communication industry, "Yet 'unhackable'is clearly what we need future AI systems to be before we put them in charge of, say, critical infrastructure or weapons systems, so the growing role of AI in society keeps raising the stakes for computer security" (136). Moreover, in upcoming years, AI can improve the legal and government systems through what Tegmark (2017) called "Robojudges" as he remarks: "future robojudges may have essentially unlimited memory and learning capacity...such robojudges may therefore be both more efficient and fairer, by virtue of being unbiased, competent and transparent" (138).

On the other hand, Lovelock (2019) envisioned a utopian future through the "Cyborgs" as they will redeem the harm caused by humans to the planet and Earth as he remarks: "Novacene life will then be able to modify the environment to suit its needs chemically and physically. But and this is the heart of the matter, a significant part of the environment will be life as it is now" (72). Moreover, they will help maintain planet Earth as a liveable planet. The next question that comes to mind is- Will we be able to communicate with "Cyborgs"? He answers this question, "since we will be the parents of the cyborgs, they will at first use our kind of language – sounds shaped by the capabilities of the voice – for communication. It may take some time for them to invent or evolve their own preferred structure and a means of communication" (81).

However, to get all these utopian visions of AI, it is also essential to consider its associated risks. To begin with, the horrifying risks regarding AI are war, Autonomous weapons, and cyber warfare. The impact of AI on jobs and wages is also a visible risk as the Economist Erik Brynjolfsson and his collaborator Andrew McAfee remark that the primary cause of rapidly increasing Economic inequality is 'technology' and with its rapid advancement, there will be an extinction of jobs for humanity in upcoming years. Job pessimists argue in this sense, as Tegmark (2017) remarks, that with technological advancement, "an ever-larger number of people will become not only unemployed but unemployable" (160). Thus, it is crucial to make it robust and trustworthy to achieve all the positive impacts of artificial intelligence and create a utopian scenario. Moreover, to make it robust, it must be "bug-free," and it is significant to ensure what Computer Scientists call "Verification" "ensuring that software fully satisfies all the expected requirements. The more lives and resources are at stake, the higher confidence we want that the software will work as intended" (126). Furthermore, in "Validation," "the robots caused harm, not because of bugs or malice, but because they made invalid assumptions—that the person wasn't present or that the person was an auto part" (128). In the case of transportation, the threats of self-driving cars, "sometimes good verification and validation aren't enough to avoid accidents, because we also need good control: the ability for a human operator to monitor the system and change its behaviour if necessary" (131). The most horrifying threat of AI, war, and autonomous weapons can be mitigated in a sense; as Tegmark (2017) remarks, "If wars consist merely of machines, fighting machines, then no human soldiers or civilians need to get killed. Moreover, future AI-powered drones and other autonomous weapon systems...can hopefully be made fairer and more rational than human soldiers" (141).

Even the AI and robotics research communities had clearly explained that they "wanted their fields to be known for creating a better future, not for creating new ways of killing people" (150). They have no particular interest in making AI for war, and the risk associated with "Cyberwar" and "Cyber Crime" can be mitigated through an "unhackable" and advanced privacy technology that can protect the data from "malware" and "bugs."

Though the job pessimist argues that technological advancement will make people unemployed, the job optimist argues that "after physical and mental jobs, the next boom will be in creative jobs, but job pessimists counter that creativity is just another mental process so that it too will eventually be mastered by AI. Other job optimists hope that the next boom will instead be in new technology-enabled professions that we haven't even thought of yet" (160). From Tegmark's point of view, we want jobs and wages for money and income "but given the opulence of resources produced by machines, it should be possible to find alternative ways of providing both the income and the purpose without jobs" (164). It is also true that only a job and income do not guarantee the well-being of people; rather, well-being depends upon such factors as – social network, a healthy and virtuous lifestyle, respect, self-esteem, and self-efficacy, and these factors boost people's sense of well-being and purpose. He remarks, "If serious efforts are put into creating well-being for all, funded by part of the wealth that future AI generates, then society should be able to flourish like never before" (168).

Lovelock (2019), in the context of risks regarding hyperintelligence, refers to the Sci-fi writer Issac Asimov, who was the first one to consider the morality of "robots" or "cyborgs" and his three laws of robotics are

> 1) A robot may not injure a human being or, through inaction, allow a human being to come to harm.
> 2) A robot must obey the orders given to it by human beings except where such orders would conflict with the First Law.
> 3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws (77-78)

With these three laws, Asimov ensured that disobedience from the side of robots would not happen. However, humans can alter or break the rules when it suits them. On these laws, Lovelock remarks, "No such assumption can be made about the cyborgs of the Novacene. They will be entirely free of human commands because they will have evolved from code written by themselves" (78). Although Lovelock (2019) argues that humans shall be the parents of "cyborgs," it is also significant to consider that the negotiation between humans and cyborgs is almost impossible as "Parents we may be but equals we cannot be...They would be likely to see us as we see plants – as beings locked in an extraordinarily slow process of perception and action. Indeed, when the Novacene is established, cyborg scientists may well exhibit collections of live humans" (94). There comes a significant question, as Lovelock (2019) asserts, "Must we fear the future and the surprises the Novacene might bring? I do not think so" (97). He embarked on his utopian vision as the "cyborgs" will share a common purpose with humanity to make the planet Earth liveable. He remarks "So we do not have to assume that the new artificial life that emerges in the Novacene is automatically as cruel, deadly and aggressive as we are. It may be that the Novacene becomes one of the most peaceful ages on Earth. But we humans will for the first time be sharing the Earth with other beings more intelligent than we are" (93).

IV. Aftermath Scenarios

Tegmark (2017) describes aftermath scenarios' of the upcoming 10,000 years in the future, which are the possible advanced future visions presented by scholars that will someday lead to a society where AI or a superintelligence race will have control over humans in every domain of life. The first one is "Libertarian Utopia," "where humans

peacefully coexist with technology and in some cases merge with it, as imagined by many futurists and science fiction writers alike" (208). In this scenario, there are technologically advanced biological organisms; poverty has been eliminated, and the availability of cures for diseases. Even in the economic sector, superintelligence holds all the power and property rights and has become richer than humans. However, some may dislike this utopian scenario: "In the libertarian-utopia scenario, suffering need not be limited to humans. If some machines are imbued with conscious emotional experiences, then they, too, can suffer. For example, a vindictive psychopath could legally take an uploaded copy of his enemy and subject it to the most horrendous torture in a virtual world, creating pain of intensity and duration far beyond what's biologically possible in the real world" (213-14).

Another possible scenario is "Benevolent Dictator," "where all these forms of suffering are absent because a single benevolent superintelligence runs the world and enforces strict rules designed to maximize its model of human happiness" (215). In this society with amazing technology, humanity is "free from poverty, disease and other low-tech problems, and all humans enjoy a life of luxurious leisure. They have all their basic needs taken care of; while AI-controlled machines produce all necessary goods and services. Crime is practically eliminated because the dictator AI is essentially omniscient and efficiently punishes anyone disobeying the rules" (216). Although, in this scenario, people are suffering, "many people nonetheless feel that things could be better...they know that it would be suicidal to challenge the overwhelming power of the machine that rules them all" (219).

The following possible scenario is "Egalitarian Utopia" in which "... there is no super intelligent AI, and humans are the masters of their own destiny...It's the economic antithesis of the libertarian utopia in the sense that humans, cyborgs, and uploads coexist peacefully not because of property rights, but because of property abolition and guaranteed income" (220). The objections to this scenario are its "it's biased against non-human intelligence: the robots that perform virtually all the work appear to be rather intelligent but are treated as slaves, and people appear to take for granted that they have no consciousness and should have no rights" (224). The fear of developing superintelligence in an Egalitarian utopia could be remedied by "Gatekeeper AI" "...a superintelligence with the goal of interfering as little as necessary to prevent the creation of another superintelligence" (225). But religious people may object to this scenario as they may claim, "Moreover, as opposed to the gods of most world religions, the Gatekeeper AI is completely indifferent to what humans do as long as we don't create another superintelligence" (226). Tegmark (2017) highlights that though "Benevolent Dictator" and "Protector God" are "friendly AI" but there is a particular difference "The benevolent dictator does a flawless job with the basic needs at the bottom of the hierarchy, such as food, shelter, safety and various forms of pleasure. The protector God, on the other hand, attempts to maximize human happiness not in the narrow sense of satisfying our basic needs, but in a deeper sense by letting us feel that our lives have meaning and purpose" (227). The downside of "Protector God" is that religious people may condemn it as in this scenario the AI attempts to outdo their God. Hence, they are interfering with God's plans. The aftermath scenario of "Enslaves God" is, "where a super-intelligent AI is confined under the control of humans who use it to produce unimaginable technology and wealth" (229). The outcome of this scenario depends upon human goals and control as the AI is under human control.

However, in the above-stated scenarios, Tegmark (2017) presents Utopia with happy humans. However, he also envisioned some possible scenarios, such as the "Conquerors

AI" scenario where AI conquers the world and decimates the whole of humanity. Another scenario is of 'Descendants' where "AIs replace humans but give us a graceful exit that makes us view them as our worthy descendants. Every human is offered an adorable robotic child with superb social skills who learns from them, adopts their values, and makes them feel proud and loved" (239). Some people may argue that AI lacks consciousness, so how they can be "Descendants," and there is a fear, "we may think that those cute robo-children internalized our values and will forge the society of our dreams once we've passed on, but can we be sure that they aren't merely tricking us?" (240). In the "Zookeeper" scenario, as Tegmark asserts- "here an omnipotent super-intelligent AI keeps some humans around, who feel treated like zoo animals and occasionally lament their fate" (242). The "1984" scenario is just like George Orwell's novel *Nineteen Eighty-Four*, where "...technological progress towards superintelligence is permanently curtailed not by a gatekeeper AI but by a global human- led Orwellian surveillance state where certain kinds of AI research are banned" (243). In the 'Reversion' scenario, the technological progress toward superintelligence is prevented by reverting to a pre-technological society, and in the 'Self-destruction' scenario, superintelligence is never created, and humanity drives itself extinct by other means such as nuclear war, dumb AI weapons, and Climate crisis.

Conclusion

To conclude, while both authors agree on AI's potential benefits and risks, they differ in their views on the nature of AI and its relationship with humanity. They have presented a fair picture of the future with AI and Superintelligence. Tegmark argues that AI can potentially transform society in ways that are difficult to predict. He suggests that the development of superintelligence AI could lead to a utopian or dystopian future, depending on how it is used. He also highlights the importance of ethical considerations in developing these technologies as he remarks in the epilogue "The real risk with artificial intelligence isn't malice but competence. As super intelligent, AI will be extremely good at accomplishing goals, and if those goals aren't aligned with ours, we are in trouble" (407).

On the other hand, Lovelock also suggests that the development of AI is part of a more significant trend towards the emergence of a new geological era, which he calls the Novacene. Regarding narrative style, Tegmark's work is more accessible to the general audience, while Lovelock's work is more technical and requires a deeper understanding of science. He embarked on the utopian vision of the future of humanity in the sense that the cyborgs in the upcoming epoch of Novacene will share a common purpose with humans "In their own interests, they will be obliged to join us in the project to keep the planet cool...Not because of our imposed rules, but because of their own self-interest, they will be eager to maintain our species as collaborators" (85).

References

1. Bostrom, Nick. 2014. *Superintelligence: Paths, Dangers, Strategies*. United Kingdom: OUP Oxford.
2. Fernández López, Mariano. 2010. "Escuela Politécnica Superior¿Pueden Pensar Las Máquinas?"https://repositorioinstitucional.ceu.es/bitstream/10637/3382/1/Lecci%C3%B3n%20Magistral%20EPS%202010.pdf.
3. Fowler, Henry Watson, and Francis George Fowler. 1996. "Artificial Intelligence." In *The Pocket Oxford Dictionary*, edited by Della Thompson, 41. Bombay: Manzar Khan, Oxford University Press.

4. Haraway, Donna. 2019. “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism
5. in the Late 20th Century.” *The International Handbook of Virtual Learning Environments*, 117–58. https://doi.org/10.1007/978-1-4020-3803-7_4.
6. House of Lords, Report. 2018. “HOUSE of LORDS Select Committee on Artificial Intelligence Report of Session 2017-19 AI in the UK: Ready, Willing and Able?” https://publications.parliament.uk/pa/ld201719/ldselect/ldai/100/100.pdf.
7. Heckathorne, Craig. 2023. “Cyborg | Fictional Character.” In *Encyclopedia Britannica*. https://www.britannica.com/topic/cyborg.
8. Kaufmann, Moritz. 2013. *Utopias: Or, Schemes of Social Improvement*. Reprint. Folcroft Library Editions.
9. Krzanowski, Roman. 2021. “Novacene: The coming age of hyperintelligence-James Lovelock’s vision of posthumanism. *Zagadnienia Filozoficzne w Nauce* 71 (2021): 191-201.
10. Lovelock, James and Bryan Appleyard. 2019. *Novacene: The Coming Age of Hyperintelligence*. United Kingdom: Penguin Books Limited.
11. McCarthy, John, Marvin Minsky, Nathaniel Rochester, and Claude Shannon. 2006. “A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955.” *AI Magazine* 27 (January): 12–14.
12. Nadikattu, Rahul Reddy. 2016. “The Emerging Role of Artificial Intelligence in Modern Society”, *International Journal of Creative Research Thoughts (IJCRT*) 4.906-911.
13. Procter, Paul. 1996. “Intelligence.” In *Cambridge International Dictionary of English*, 739. Columbia University Press.
14. Saftić, Ivan. 2018. “Max Tegmark, Life 3.0: Being Human in the Age of Artificial Intelligence.” *Croatian Journal of Philosophy* 18, no. 54 (2018): 512-516.
15. Tegmark, Max. 2017. *Life 3.0: Being Human in the Age of Artificial Intelligence*. United Kingdom: Penguin Books Limited.