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Representation of the Dystopian Nature of Technology in Literature

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Abstract:

The word AI or Artificial Intelligence, booming in this era of digital humanities and technological world, has widely and swiftly advanced in almost all parts of the globe. As everything has two sides of the coin, or rather multiple sides, it is the same with AI, it has its pros and cons too. This paper focuses on the gloomy, adverse and sombre side of the AI and technology as presented in the literature. Many literary works paint the dystopian and apocalyptic image of the same. The paper parallelly examines the novels like *Oryx and Crake, Machines Like Me,* and *Solaris* by Margaret Atwood, Ian McEwan, Stanislaw Lem; Canadian, British and, Polish novelists respectively. It also frames analogously, a depiction of AI, technology and the element of humane versus non-humane. The technology has many positive sides but this paper will centralise more on the nightmarish elements of the same by giving literary examples from literature as, literature, from many decades ahead foreseen the Orwellian future of society due to the unsupervised use of AI and technology.

Keywords: Artificial Intelligence, Dystopia, Paranoia, Apocalypse, Humane vs. Non-humane.

Introduction:

Focusing on the term or the word AI, it was coined by an American computer scientist and cognitive scientist named John McCarthy in the 1950s, he is known as the father of AI in the world, and Daballa Rajgopala Reddy is considered to be the Indian father of AI. However, these two are the early examples or pioneers of AI. If the recent, modern, or contemporary example is looked at, then the towering, mammoth, gigantic, and baronial figure in this field is Geoffrey Everest Hinton, who is also popularly known as the 'God-father' of AI, who was

previously employed at Google but has now quit. Due to his immense contribution in the field, the world has been paced forth in the technological development of artificial intelligence. But in one of the interviews taken by the New York Times, Hinton provided the reason for his resignation; he says he quit Google "to speak freely about the dangers of AI." Further on, he also added, "I don't think they should scale this up more until they have understood whether they can control it." (https://fortune.com/2023/05/01/godfather-ai-geoffrey-hinton-quit-google-regrets-lifes-work-bad-actors/)

Hinton also deeply regretted his profound contribution to the field which wreaked havoc on the cognitive behavioural and patterns of human beings. Due to this reason, Hinton has started to withdraw the technology he has given to the world, and he is working in reverse day and night to minimise the usage of the technology to lessen the adverse impact.

On the other hand, the AI in today's era has too many 'technified-capabilities', but all the nations and humanity seem to have failed to identify the right moral framework under which the power should be exercised. Not only that, but human history has witnessed and has also provided evidence and has often failed to prove that when it has been given immense power to technology and AI and has not identified the appropriate, underlined moral framework, then it has created destruction and chaos. The best example of this is the invention of atomic energy by Albert Einstein. This is considered to be an ice-breaking invention for the world that people would have used for a positive purpose and manner, but it ended up destroying and mass exterminating two of the big cities of Japan, i.e., Hiroshima and Nagasaki. The other aspect of the same is that, the purchase or ownership of war weapons like guns, bombs, tanks, etc. is just a pretext of self-protection or being 'well-equipped' but it leads to collective immoral activities like genocide; similarly, AI can also be taken as a euphemism for the development or for the sake of advancement, leading to the slaughtering of the psychological and cognitive behavioural patterns and the eradication of the in-born as well as developed human agencies and skills. In most of the scenarios, an individual dependent on A.I. pours the intelligence on machines and remains under the illusion that the machine would do the human job of thinking and decision-making, which has led to the growing numbers and generation of 'machine-maniacs' and 'techno-humans'. Resulting in this is the factor of choice, which is the fundamental, moral, rational, and ethical right exclusively given to humans, being transferred to robots, chatbots, and machines, demolishing the real, natural human intelligence. Another bleaker side of this is, that the 'supervised learning' (a technical term meaning the AI chat

bot/technology makes decisions as per the manual setting or programmed setting made by a human being) has, in many situations, observed biases.

It can be said that the concept and the technology of artificial intelligence gained popularity in the past couple of decades, but literature presents the concept, and at the same time, foresees and depicts the apocalyptic side of the same in many novels and plays before the arrival of the technology, starting from Mary Shelley's *Frankenstein* to contemporary novelists like Ian McEwan putting forth the negative side of it in their novels. Not limited to the novels, but also plays like *Harvest* by the prominent Indian playwright and novelist Manjula Padmanabhan, which was also later on adapted into a Bollywood film titled 'Deham', which can be translated into English as 'The Body' directed by Govind Nihalani, shows the sombre side of technology and AI.

The Dystopian and Apocalyptic Representation of Technology through Literature.

Oryx and Crake

Margaret Atwood is one of the senior writers living today who is, professionally speaking, a Canadian poet, novelist, literary critic, essayist, teacher, and environmental activist. She has an abundant amount of works titled after her name, and her fiction includes a wide range of genres, from historical fiction and speculative fiction to climate fiction and dystopian fiction. Through her fiction and narratives, Atwood tries to problematize notions and concepts like utopia, dystopia, and the recently emerged term 'ustopia' (the coexistence of both utopia and dystopia) by showing her concerns about the devastating and apocalyptic future of the Earth, stressing on her factual view that this present age can be considered a 'post-apocalyptic' (technical) age.

The novel *Oryx and Crake* shows the ruinous effects of the unbridled scientific power of humans as they attempt to play 'God' by re-engineering and re-designing humanity according to their own pattern/vision resulting in 'virtual destruction' of the world. Atwood presents the cataclysmic events of this novel through a dual time frame. The past illustrates the ecological/climate destruction of the globe affected by capitalist multinational corporations through the lens of Jimmy's childhood. The present time depicts the protagonist, Snowman (Jimmy), who survives the virus and has been left in charge of a group of child-like genetically enhanced or modified humans that were created by Crake. Snowman is the sole/only inheritor after an apocalyptic mass death. He struggles to survive in post-apocalyptic situations and

spends much of the time immersing and brooding in his memories of pre-apocalyptic life. The novel also leads the readers to take an intellectual detour and to think on the idea/concept given by Derrida, reflected in his work 'No Apocalypse, Not Now' (1984), focusing on the threat of nuclear war in his horror at the "anticipatory assimilation of that un-anticipatable entirely – other" (pg. 23), wondering whether humanity is able to or can negotiate with nuclear power or whether it has taken too powerful an adversary by releasing such weapons.

The novel is considered a futurist novel because it deals with genetic engineering. The style of the narration is anti-linear, as it moves back and forth in different time frames, gradually revealing the events, incidents, and facts to the readers as the story progresses. It begins by introducing the central character, the protagonist of the novel, Snowman, sitting near the sea, and he appears to be dishevelled, disturbed, and gaunt. At this point in time, the novel vividly makes clear that he (Snowman) is the last of his kind, i.e., humankind or homosapien. There are other creatures around him known as the "children of Crake" or "Crakers," but Snowman cannot relate him to them. He feels totally dejected and deserted among the Crakers. The novel also paves a road to the boyhood or personal past of Snowman (Jimmy). His parents were genetic engineers, and they used to argue about ethics, and his mother left the business to become a revolutionary; later on, she was executed for her beliefs. Jimmy was a normal student when he met Glenn. Both of them had different personalities, but they befriended each other and spent time together watching videos online. One of the videos featured a girl named Oryx, which caught Jimmy's attention, and this created a love triangle between Oryx, Jimmy, and Glenn (Crake). Jimmy was shocked when he found that Glenn had slept with Oryx while Jimmy was at the college.

Before writing this book, Atwood visited the aboriginal cave dwellings in Australia over tens of thousands of years old, which showed that people were living in harmony with the environment. While Atwood praises that science and fantasy may help one realise human dreams, such as 'eternal youth', 'god-like beauty', 'hyper-intelligence', and 'Charles Atlas strength', she also, at the same time, criticises by saying that the scientific experiments have the chaotic power to cause havoc in the world. The 'mad scientist' and his monstrous attempt to create human immorality in Mary Shelley's *Frankenstein* (1818) haunt Atwood's work *Oryx and Crake,* showing how the human attempt to play or act God could destroy the earth.

Oryx and Crake was published on the 5th anniversary of Crick and Watson's discovery of the structure of DNA and when the human genome was fully/completely sequenced. The

"Olduvia Theory" of Richard Duncan offers a similar warning that human history's industrial advancement and development have peaked and have reached their zenith, and the age is now declining into a crash, which may raise the possibility of returning to the technology of the Neolithic Age, as he takes the "transient pulse theory" of industrial civilization. The dual time frame of *Oryx and Crake*, between the destroyed and already fragile past of Jimmy, which had been ticking away like a time bomb, and the devastated world, which is his surviving persona, i.e., Snowman, suggests to Katherine Snyder's trauma theory, "Time to Go: The Post-Apocalyptic and the Post-traumatic" (2011). Thus, the character of Snowman is seen to be trapped within the endless circling loop as he retraces the suffering of his former self, Jimmy, through his childhood traumas, including the early loss of his mother and the failures and advances in experiments for which he feels responsible and guilty.

Through Jimmy's memories, it can be noted that he grew up in a world that was heavily controlled/dominated by corporations and that his father worked for a company called Healthwyzer, which was involved in genetic engineering and biotechnology. Both Jimmy and Glenn spent their childhood together playing games like "Barbarian Tomb" (see if you can change history), "Blood and Roses," and the third and most important one, which the novelist has emphasised, is "Extintathon" (derived from the word Extinct), and they became so expert in playing this game that they were even referred to as Extintathoners in the novel. It also symbolically means that due to technology, human beings are becoming extinct, and Jimmy and Glenn played a great role in that, but they also regret the same in the later part of the novel. Apart from this, the novel also informs the readers that the corporation Healthwyzer is involved in the creation and production of products like Blysspluss pills, which caused the apocalyptic mass death of the human species, and a place called Paradice. The novel ends with Snowman deciding to share his memories of the past with the surviving humans in the hope that they may learn from the mistakes of the past and build a better future. The novel's ambiguous ending leaves open the possibility that humanity may be able to create a better world, but it also suggests that the dangers of scientific progress and unchecked corporate power are not easy to overcome. Atwood ends the novel by posing some debatable questions: What makes us humans? What is the fundamental notion/idea of humans and humanity? On the other hand, are science and technology the real achievements of humans, or do they merely turn out to be tools for environmental and human destruction? So, this novel meticulously depicts the horrors of science, technology, and engineering and their chaotic effects on the human world and

human agency. It also points out the competency between art and science and states that science may destroy, but art exists perpetually.

Machines Like Me:

Ian McEwan, or Ian Russell McEwan in full, is a British novelist and screenwriter, aged 75. He started his literary journey by writing gothic short stories and is today best known for his novels and for contributing profoundly to the world of modern literature. He has dealt with the issue of technology in his recent novel *Machines Like Me* (2019), his 15th novel. In the modern setting, McEwan, with the help of fiction, ambiguously puts forth the challenges faced by the fictional human character due to an android / AI-programmed humanoid. With the help of his novels, he portrays the humanising side of the machine and the dehumanising element of humans. Keeping this paradox in his novel, it seems to be an open-ended novel, not imposing any ideology on the readers and keeping them free to interpret in their own way.

Ian McEwan's *Machines Like Me* deceptively appears to be belonging to the genre of science fiction. But on a closer analysis, the novel betrays the textual signs/hints of uneasiness about its categorization as a work of sci-fi genre. Generally speaking, science fiction is a genre of speculative fiction dealing with the futuristic imaginations of mankind amidst the scientific and technological advancements. This popular notion of sci-fi as a literary genre has led to the hostile criticism of McEwan's novel *Machines Like Me*; it was also blamed for its lack of originality as a work of sci-fi. Against such criticism, this novel proclaims its own peculiar brand of sci-fi by appropriating some of the generic conventions of sci-fi.

One of the most extravagant appropriations of the sci-fi genre in this novel includes McEwan's decision to locate the story of the novel not in some distant future but in the near historical/immediate past. The story of the novel is set in the England of the 1980s. But this England is one in which major stages of technological advancements and scientific inventions have already been materialised. Thus, the novel offers a curious mixture of past and future, and so it's more appropriate to term/name this novel as an example of retro-futurist fiction. This going against the sci-fi conventions on the part of the author is actually suggestive of his more intricate inquiry into the human dilemma, i.e., the question of what constitutes human beings, the problem of ethical choice of freedom, and the human consequences of the coexistence between humans and machines. McEwan probes into these questions by placing his story within the framework of alternative history.

At the beginning of the novel, McEwan portrays a highly technological alternative England in the year 1982 which is fully competitive with the later part of the 21st century. In this alternative England, the famous mathematician and computer scientist Allen Turing (1912-1954) is still alive and the humanoids (robots) have become the routine reality. The narrator-protagonist of this novel is Charlie Friend, a 32 year British man who is highly passionate about electronics, androids, and robotics. He buys an AI-enabled humanoid named Adam. This humanoid is endowed out with human-like intelligence and programmed to 'feel', 'think', and 'act' like the humans. After buying Adam, Charlie programmes him with the help of his girlfriend named Miranda. She is pursuing her Ph.D. in sociology and stays in a flat upstairs at Charlie's Clapham. The plot of the novel becomes complex as the author introduces other strands. The first is the love triangle between Charlie, Miranda and the humanoid Adam. The relationship between Charlie and Miranda strained after Miranda had a physical relation with Adam. The rapidly evolving Adam also declares his love for Miranda. Charlie is uncomfortable about this, whereas Miranda is unperturbed because she takes Adam to be just a machine and a tool to subdue her desires. The love triangle gets more complicated with the subplot involving Miranda's secret from her past life before she got acquainted with Charlie. Miranda as a school going girl had a friend named Mariam (a Pakistani Muslim girl). This girl Mariam was raped by their classmate Peter Gorringe. Mariam, due to her sense of shame and guilt, had not revealed about this event to anyone in her family. She had only confided about this with Miranda. Shortly after this, Mariam had committed suicide and her family remains in the dark regarding the real reason behind this tragedy. So Miranda has started feeling guilty and decided to take revenge. Accordingly, she had planned a scheme to get Gorringe punished for his crime. She had gone to his home and had physical intercourse with him. Later on, she had accused him of raping her and got him punished. Now Gorringe is about to be released from prison and he has sent threats to Miranda.

After his release from the prison, Charlie and Miranda along with Adam go to his place and confronts him about his actual crime of raping Mariam. Another strand of the sub-plot involves Charlie and Miranda's plan to adopt the abandoned child, Mark. The plot reaches its climax when Adam, following his human-like moral sense, decides to effect justice. Accordingly, he informs the police about the past of Miranda which then sends her to prison for her false accusation of Gorringe. Not only that, Adam also donates Charlie's money to social welfare organisations, thereby making Charlie go penniless. When Miranda and Charlie come to know about this, both of them are awe-struck. Charli, in a feat of rage, hits Adam with

a hammer that leads to his subsequent destruction. But what Adam has put into motion cannot now be stopped and the couple has to face the consequences. As a result, Miranda goes to prison and Charlie adopts Mark and waits for Miranda's release.

Thus, the humanoid Adam emphasises on honesty and welfare act creates the thematic paradox with Charlie and Miranda's selfish concerns that led them to destroy/kill Adam. McEwan invites the reader to grapple with this paradox of dehumanisation of biological humans and the humanization of artificially manufactured humanoids. McEwan keeps forth the rhetoric and dilemmatic question for the reader: who is good for society; machine or humans? But the novel vividly portrays the good as well as the dark side of how technology and A.I. driven devices can take a toll on the human society and human condition. It also shows that supervised learning can be biassed and one-sided. The event where Charlie programmes the humanoid according to the desires of his girlfriend and his reverted in unexpected situations affecting the personal and social life of Charlie and Miranda and to a certain extent of Mark. Similarly, if the same incident happens in today's era the technology will be a bane for humanity if not monitored and used in an appropriate way.

Solaris:

Stanislaw Lem's *Solaris* is a sci-fi that talks about the future of humanity and its challenges, as well as depicts the dystopian future of humankind by raising a debatable question, i.e., how long can the Earth and humans survive? Stanislaw Herman Lem (1921-2006), a Polish writer born in erstwhile Poland (now Lviv, Ukraine) and died in Krakow, Poland, is a writer of science fiction and essayist who discussed various subjects like futurology, philosophy, and literary criticism. He is mostly known for his satirical and humorous characters and provides a philosophical exploration through speculation on technology, the nature of intelligence, understanding of alien intelligence, and despair about human limitations in the cosmos.

Solaris, also considered as the magnum opus of Lem, is not only a sci-fi but also a profound philosophical work depicting the microcosm of humanity and its limitations against the human attempt to play God. At the same time, passing the message that humans should respect nature and the cosmos, accept the co-existence of other creatures, and not try to be the dominant force of the universe. It was originally written in Polish in 1961 and later translated into English in 1970 by Joanna Kilmartin and Steve Cox.

The novel also has a panoramic range of themes, making it a psychological, philosophical, ontological, realistic, historical, epistemological, futuristic, and gnoseological novel, while also framing a unique plot line for a conventional sci-fi novel. This is one of the reasons this novel attracts a variety of readers, including main-line/main-stream readers of English. The novel consists of a few characters: Kris Kelvin (a psychologist and scientist), Dr. Snow (an expert in cybernetics), Dr. Sartorius (a physicist), and Rheya (an Aphrodite of Kelvin's dead wife). The name 'Solaris' is of an invented planet by the author, making it an imaginative title. The plot mostly revolves around Kris, the protagonist of the novel, who has recently arrived on the space station named 'Prometheus' located above the oceanic surface of the planet of the Solaris, which is also the locale of the novel. Kris arrives at the research station and finds it to be in a completely baffled state, finding various mysterious series of events described by the other scientist on the station. He receives the news of the death of Gibarian (who has committed suicide), which forces him to investigate the cause of such ghastly events. Not only that, Dr. Sartorius has locked himself in his cabin, not wanting to talk anything with Kris. Kris examines the ocean, which is located on a planet that is able to perform "ceaseless metamorphic transformation," creating various structures/physical beings from the past of the Solarists. The novel names these structures as "phi-creatures.". After learning about such creatures, Kris demands that Snow should explain about it, but he refuses to say anything. Kris also comes to know that Sartorius, who has locked himself in the room, is not alone. Later on, Kris is in total astonishment when his dead wife (who died 10 years ago) visits his room (who is also a phi-creature and not the real human). Kris is unable to figure out how and why this manifestation of his wife takes place. In order to get rid of it, in a totally horrified manner, Kris treacherously gets the phi-creature of his wife into a space shuttle and fires it into the space/cosmos. After this experience with Kris, Snow believes that now he must tell the truth: all the staff members on the station have had such experiences and maybe this is one of the key reasons for the suicide of Gibarian and the terrified behaviour of other members. "The manifestations invariably solidify guilty secrets of some kind- fetishes, obsessions, or unresolved psychological problems." (Masterplots, pg. 5383) Snow tells Kris that it should be no wonder that each individual has such fantasies and secrets. Snow also explains that the 'sentient ocean' is responsible for creating these creatures. He also suggests Kris to read the book *"The Little Apocrypha",* a copy of the same was found by Kris earlier on the station, which will help him learn about the previous research done on the ocean and will also provide the history of it. Kris, while reading the book, finds it to be a speculative and pseudoscientific counterpart of the research made on the planet.

Kris is once again visited by his wife Rheya, who is capable of regeneration, and Kris finds that there's no way to get rid of it. Thus, Kris starts to perform research on it, examines it, and gradually falls in love with her as her own wife. On the other hand, Sartorius informs him that these creatures are made of some different matter. Sartorius also somehow builds a device to destroy these creatures and destroys the creature (Rheya) in an experimental use of the device. Soon after use, the machine breaks down and is unable to be used again. Kris, deeply attached to his phi-creature Rheya, is now in pain and desires to be with her again. Towards the end of the novel, Kris is having a chain of perplexed thoughts and is now working to bring Rheya into being once again and to know the 'sentientness' of the ocean with no avail. He also believes that the ocean is the "hermit of the cosmos," and he also suggests that the creation of the phi-creature by the ocean is a cruel miracle for him and that this ocean is like a "sick and despairing god." Kris, throughout his life, remains in inner turmoil to see Rheya again realising the human limitation in the cosmos and the tininess of their power and technology. Hence, contrary to the traditional notion of the sci-fi novel, the plot of this novel proves to be unique as it shows that technology is able to make humans happy and in despair at the same time. The novel celebrates technology and human knowledge, but at the same time, it also shows that technology is equally harmful physically and psychologically to humankind. And as one can never be able to take control of the cosmos/universe, the human attempt to play god and take total control of technology will not prosper. The novel also conveys the message of co-existence and depicts the human reaction to an alien force. To a certain extent, it can be said that the technology and the ocean on the imaginary planet Solaris are the same as humans; alike, the Solarists will be unable to know how exactly both functions, what the depths of it are, and if it is even possible to understand, then at what level will it (technology) be developed. The novel poses the challenge of whether or not the human mind is able to contemplate and explore the depths of technology, or whether it is too big a subject and adversary for the human brain.

To conclude, the observations made through comparative analysis of various fictions yield evidences that the literature talks about the futuristic dystopian traits of uncontrolled scientific powers, inventions, and unrestrained use of technology, keeping the prism of literature and novels in the middle and showcasing the harms of technologies when given total reliance. The destruction is not limited to the human elements, but also extends to the harming of nature as well as the denial of the attitude of co-existence by humans in order to achieve

scientific godliness and dominance, raising the contemporary issue and emergence of the age of the Anthropocene and the literary genre of cli-fi.

Works Cited:

https://youtu.be/Q0bXj_yv47A?si=_sZeK6lpZLgmQwut

https://fortune.com/2023/05/01/godfather-ai-geoffrey-hinton-quit-google-regrets-lifes-work-bad-actors/

Barry, Peter. *Beginning Theory: An Introduction to Literary and Cultural Theory*. Viva Books, 2018.

Abrams, M H. *A Glossary of Literary Terms*. Cengage India Private Limited. 2015.

McEwan, Ian. *Machines Like Me*. Vintage Publishing. 2019.

Atwood, Margaret. *Oryx and Crake*. Virago Press Ltd. 2013.

Lem, Stanislaw. *Solaris*. Faber & Faber. 1970.

Atwood, Margaret. "Time Capsule found on the dead planet". 2009

Derrida, Jacques, Catherine Porter & Philip Lewis. "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives)". 1984.

Gulcu, Tarik Ziyad. "What If Robots Surpass Man Morally? Dehumanising Humans, Humanising Robots in Ian McEwan's Machines Like Me." *International Journal of Languages, Literature and Linguistics* 6.4 (2020): 177-182.

Shang, Biwu. "From Alan Turing to Ian McEwan: Artificial intelligence, lies and ethics in machines like me." *comparative literature studies* 57.3 (2020): 443-453.

Ferrari, Roberta. "A Plunge into Otherness. Ethics and Literature in Machines Like Me by Ian McEwan." *Between* 12.24 (2022): 247-271.

Atwood, Margaret. "The Handmaid's Tale and Oryx and Crake in Context." *PmLa* 119.3 (2004): 513-517.

Chang, Hui-chuan. "Critical dystopia reconsidered: Octavia Butler's Parable series and Margaret Atwood's Oryx and Crake as post-apocalyptic dystopias." *Tamkang Review* 41.2 (2011): 3-20.

Dunlap, Allison. "Eco-dystopia: Reproduction and destruction in Margaret Atwood's oryx and crake." *Journal of Ecocriticism* 5.1 (2013): 1-15.

Yossef, Abraham. "Understanding Lem:" Solaris" Revisited." *Foundation* (1989): 51.

Sławkowska-Rode, Monika Anna, and Mikolaj Slawkowski-Rode. "Revisiting Solaris: encountering otherness and the limits of representation." (2021): 78-91.

Haffner, Peter. "Stanislaw Lem: A Moralist Who Doesn't Moralize." *Science Fiction Studies* (2001): 149-154.

Bringsjord, Selmer, and David Ferrucci. *Artificial intelligence and literary creativity: Inside the mind of brutus, a storytelling machine*. Psychology Press, 1999.

Pentina, Iryna, et al. "Consumer–machine relationships in the age of artificial intelligence: Systematic literature review and research directions." *Psychology & Marketing* 40.8 (2023): 1593-1614.

Cave, Stephen, and Kanta Dihal. "Hopes and fears for intelligent machines in fiction and reality." *Nature machine intelligence* 1.2 (2019): 74-78.

Gruenwald, Oskar. "The Dystopian Imagination: The Challenge of Techno-Utopia." *Journal of Interdisciplinary Studies* 25.1/2 (2013): 1.