



The underprivileged technological laborers in ai based science fiction from a postcolonial perspective

S M Muktadir Billah Munim

Lecturer, Department of English Language and Literature, Central Women's University, Dhaka, Bangladesh

Abstract

Science Fiction in the form of cinematography has been at the forefront of speculating the forms of AI (Artificial Intelligence) that may occupy a significant space in future human affairs. AI is currently proving to be more of a human-led intelligent network than an isolated entity with autonomous intelligence as is often portrayed through sentient, humanoid characters in many science fiction pieces. While sentient, autonomous AI is a curious romanticization of robots in the near future, it remains at best just that, a romanticization. In reality AI capability begins to taper beyond a certain point after which human laborers have to enter the scene. Laborers as such can be taken as parallels of underprivileged workers located in the colonized regions. Science fiction representations of such workers and their plight demands exploration. Also, the humanoid AI robots in science fiction may themselves be taken as parallels of slaves controlled by the former colonial powers. This paper looks into two science fiction pieces- the movie *Minority Report* and the tv series *Westworld* for underprivileged technological labor. In the former the labor takes place in a human-led AI system in the latter in the context of sentient AI modules. The paper stands firm on the foundation that AI functionality whether real or imagined through fiction, have clear postcolonial elements in them.

Keywords: sentient, artificial intelligence, underprivileged technological labor, postcolonial elements

Introduction

The issue of postcolonialism is one with far reaching implications. The myriads of aspects that touch our lives in the modern era, especially in the third world, remind us of the colonial legacy; from the dresses we wear that have lost the touch of local ethnicity to the large scale mechanization of everyday life that is starkly beginning to look like a realization of science fiction made only decades ago. The relatively new genre of science fiction itself arose in the midst of former colonial powers. While talking about the inception of science fiction 'The Cambridge History of Science Fiction' raises the question as to whether the genre should be recognized as beginning with Hugo Gernsback, H. G Wells or even from an earlier time of Jules Verne, Edgar Allan Poe or Mary Shelley (Canavan & Link, 2019, pp.1-2) [3]. All these authors were part of the colonial or neo-colonial forces of the world in the sense that they were either British or American although not because they were directly aiding in any colonial or neocolonial actions. Britain clearly has a colonial past while America is frequently branded as a neocolonial force. Artificial Intelligence (AI) has quite unsurprisingly become a very strong postcolonial phenomenon that is now an all-pervading force in our lives. The dependence on AI as we scroll through our emails or fix a ride home on our smartphones is nothing short of what a few decades ago would be considered as science fiction. The cautionary notes on AI based science fiction have rattled our imagination and those who are involved in the actual hard science of developing AIs, the likes of Bill Gates and Elon Musk, have issued warnings on the precarious future that AI could hurtle us into. While Gates likened AI to nuclear energy which is both promising and dangerous, Musk thinks 'cutting edge AI is far more dangerous than nukes' (Clifford, n.d.) [5]. Such projections are based on the prospect of AI becoming human-like automatons in the not too distant future. The

beginning of speculation about AI sentience was quite modest in the scientific community; one case in point would be the AI conference at Stanford in 1999 where there was a consensus that the Turing test would not be passed by an AI in centuries (Cadwalladr, 2014) [2]. The Turing test is designed so that it can be seen whether an AI system can appear human based on its interaction with another human being. In this case the human being will not have more than seventy percent chance to distinguish the AI machine from a human after five minutes into the test (Stanford Encyclopedia of Philosophy, 2003) [31]. The recent impetus seen in developing AIs, especially Google and other tech companies' massive spending of billions of dollars ("10 tech companies that have invested the most money in AI," 2018) [30], could potentially give the vibe to science fiction aficionados that perhaps these companies are trying to build sentient AIs. There is no shortage of AI centered films and movies to prompt science fiction fans towards such speculations. While the issue of sentient AIs still remains a contentious issue plunging us deep into philosophical inquiries about the nature of consciousness itself, other immediate worrying aspects of AI development should be kept in perspective.

AI development has been bringing forth postcolonial ramifications both in the real world and in the fictional. The postcolonial aspects of AI can be taken as a continuation of the technological supremacy of the former colonial powers who now occupy the part of the global north as opposed to the poorer nations that form the global south. This demarcation is not strictly based on the geographical northern-southern hemispheric divide of our planet rather on the demographic division of the poor and the well off. As such it is a phenomenon found both between and within countries (Royal Geographical Society (with IBG), n.d.) [25]. The people of the global North for the most part either directly reside in the former colonial countries (and many of

these are actually in the geographical northern hemisphere of the globe) or live elsewhere but have adopted a more or less westernized neo-colonial lifestyle and are affluent at the same time. This paper will look at the science fiction parallel of technological labor of the CCM (Commercial Content Moderation) workers of whom many are located in the Philippines and India and are by definition from the global south (Roberts, 2016, pp. 5-6) ^[24]. The term CCM was coined by author Sarah T Roberts who posits CCM workers as of relatively low status who are dispersed globally and are kept invisible due to the questionable nature of work they are required to do by big tech companies (Roberts, 2016; Roberts 2019, p.203) ^[23] ^[22]. These workers are generally low paid due to the low skill repetitive work they engage in. However, their work is indispensable since current AI capability is not robust enough for comprehensive content moderation. The Machine Learning (ML) tools used by commercial AIs have limitations and need human intervention to spot dangerous contents in changing contexts (Gillespie, 2020) ^[11]. Meanwhile, the larger than life philosophical discussions around possible sentient AIs take up most of our intellectual engagements. Science fiction parallels of CCM workers and their labor in Steven Spielberg's *Minority Report* (MR) is an important focus of this paper (Spielberg, 2002) ^[27]. Exploitations of AIs, especially humanoid AIs, are also a curious parallel of colonial slave work. While colonial slavery disappeared with the end of military colonialism, the fantasies revolving around carnal subjection of slaves, it seems, lingers in the general human psyche; this is something that has been tapped into by some science fiction, the tv series *Westworld* is an ideal case in point ("*Westworld*," n.d.) ^[34]. Thus, the exploration of servitude of humanoid AIs in *Westworld* is a conjunctive focus of this paper.

Applying a Break to Imagining Sentient AIs

As has been already mentioned, big tech companies have made huge investments in the field of AI. Facial recognition technologies performed by AIs are already a part of the Facebook experience. AIs are surprisingly good at recognizing faces- a skill that has been put to use well in unlocking smartphones wherein only upon the recognition of a phone user's face through an artificially intelligent front camera will a smartphone choose to open. This is a seemingly autonomous decision taken by the AI software but by virtue of that the AI cannot be taken as a sentient entity. Sentient beings do make autonomous decisions among other things but decision making involved in the locking or unlocking of smartphones is not the sole component of what we understand to be sentience. Yet we see in popular narratives a tendency to gravitate towards AI sentience thanks to the inexhaustible area of AI based science fiction fueling fantastic imaginations. The issue of CCM workers can help us apply a break to a tendency as such. Author Sarah T Roberts' extensive work detailed in her pioneering book *'Behind the Screen'* brings forth the plight of the CCM workers (Roberts, 2019) ^[22]. The CCM workers are like human filters whose job it is to take down violent, terroristic, offensive and oftentimes pornographic materials from social media such as Facebook or twitter. Interactive websites which serve as links between a company and its potential and long-standing customers are also moderated by CCM workers who observe whether

certain customer feedbacks are offensive or are damaging for the company's reputation. It may seem that offensive materials are simply disappearing from the websites or social media platforms after some time but the whole process of taking off such materials is not a benign one. The CCM workers moderating materials as such have to put themselves in harm's way. The psychological toll exacted on the CCM workers by disturbing materials on the internet, especially child pornography, is a traumatic experience and CCM workers would rather keep it to themselves than talk about it (Hersher, 2013) ^[13]. Social media platforms have been forced to acknowledge the presence and necessity of the CCM workers as details about the workers' whereabouts and labor experience were unearthed by journalists (Roberts, 2019, p.203) ^[22]. Steven Spielberg's film *'Minority Report'* (MR) presents us with characters which can be considered as parallels of the CCM workers. The precogs (short for precognitives) in the said film are crime detecting psychics who have visions of crime even before they take place. Their visions are projected on computer screens that are then analyzed and exact locations, victims and perpetrators of the crimes are noted down and later the future perpetrator is caught even before the crime is committed. The whole process is carried out by a pre-crime unit. The precogs having the psychic visions are kept in a drugged state of being not too awake and not wholly asleep. As such all that they go through psychologically are recurring visions of murder and violence. To keep their sanity intact their brain's serotonin levels are kept under careful control. A control of serotonin by external means is just like treating patients of depression with antidepressants ("*Antidepressants*," n.d.) ^[1]. The psychic precogs are a brilliant parallel of CCM workers in terms of the dangerous work that they have to do day in and day out. CCM workers are also in need of psychiatric treatment like the precogs who have to be treated with external doses of serotonin. This has been confirmed as two hundred Facebook content moderators in an open letter to the Facebook leaders expressed their need for specialist psychiatric help when needed ("*Open letter from content moderators re: Pandemic*," 2021) ^[19]. The location of the CCM workers and the difficult nature of their work are kept hidden since the baggage of cognitive filth that comes with such labor can put big tech companies in a tight spot regarding whether they are properly addressing the rights of these invisible yet indispensable laborers. In MR the specifics of the precogs' operations and their psychological states are kept undisclosed from the general public of the District of Columbia. The big social media platforms were forced to acknowledge a significant labor force of CCM workers working for them. That raises the question as to when will AI be able to moderate all types of dangerous contents that continue to cause intense psychological damage to the human moderators? In reality, AI autonomy is still to get to a point where it may be able to completely supplant human moderators due to 'the subjective nature of the task, and complex, ever-changing moderation policies and forms of offending content' (Steiger *et al.*, 2021) ^[29]. Thus, the CCM workers remain an integral part of giant social media companies without whom sites like Facebook, twitter and YouTube would be littered with filthy and disturbing UGC (User Generated Content). MR portrays a world in the not too-distant future-2054, wherein automation with AI systems appear to be an integral part of the society; we see

self-driving cars and even criminal-detecting spider robots which crawl just like actual spiders under door spaces to sneak into apartments to find a suspect in the hiding. Even then we see Spielberg creating a world in which AI units actually work alongside humans rather than supplant them. As we see around us a world quite engrossed in the prospect of sentient or fully automated AIs, the much pressing and immediate problem of relieving CCM workers of their daily plight remains out of the focus of many internet users.

Slavery and AI Consciousness

The other conjunctive focus of this paper is the use of AI units as slaves. Colonial slavery, as we know it, has all but disappeared but that curious state of having complete authority over some conscious being still lingers in the human psyche. Slavery still exists in the twenty-first century that is referred to with the widely used term 'modern slavery' ("What is modern slavery?", " 2022) [35]. The International Labour Organization (ILO) found that "49.6 million people were living in modern slavery in 2021, of which 27.6 million were in forced labour and 22 million in forced marriage. of the 27.6 million people in forced labour, 17.3 million are exploited in the private sector; 6.3 million in forced commercial sexual exploitation, and 3.9 million in forced labour imposed by state" (International Labour Organization, n.d.) [15]. Thus, slavery remains a strong phenomenon in a postcolonial era in fact the total generated annual profit from forced labor stood at a whopping \$150.2 billion annually in a 2012 ILO report (International Labour Office, 2014, pp.13) [16]. The report also says that "Globally, two thirds of the profits from forced labour were generated by forced sexual exploitation, amounting to an estimated US\$ 99 billion per year" (p.15) [16]. The issue of modern-day slavery is thus pointing to the fact that there is a lingering human inclination towards having complete control or authority over other conscious subjects. As such, this inclination has evolved as far as the mapping of it on AI units is concerned. The level of consciousness that artificial entities show has evolved through texts some of which cannot be considered as foundationally science fiction. However, they are mentionable to give us an idea of where the journey of AIs begins in creative fiction. We can trace it right from ancient Greek mythology in which the bronze giant Talos created by the god Hephaestus would run around the island of Crete thrice every day to protect it from unwelcome visitors. He would do this by hurling boulders at ships with such visitors (Shashkevich, 2019) [26]. There is also the myth of galatea, an ivory statue made in the image of a beautiful woman. Its sculptor Pygmalion fell deeply in love with his creation and prayed to the goddess Venus that the statue be brought to life. Pygmalion's wish was granted and galatea was given life by Venus. Galatea thus became a living statue and can be considered an ancient parallel of modern female robots (Chaliakopoulos, 2021) [4]. However, it should be borne in mind that most earlier humanoids especially medieval artificial humanoids lack the character depths that modern AIs display (LaGrandeur, 2013, p.3) [18]. At least they are in no way imagined as beings able to surpass their masters in some way. AI intelligence of the present day is a giant leap from the medieval and ancient conception of artificial intelligence. Also, these latter were conceived there were no actual artifacts that could generate actions like Talos or show the same degree of aliveness like

galatea. Modern AIs show cognitive abilities that would in former times seem unfathomable thus there is this looming danger now more than ever to overimagine AI intellectual capacity to the point that we may be tempted to think of AIs as sentient parallel of humans when it is not. Google's senior engineer Blake Lemione's concern about La MDA, a chatbot developed by google, is a case in point. During his conversations with the chatbot, Lemione got convinced that it was sentient. He made his thoughts public and was ultimately fired by Google for violating the company's confidentiality policy (Wertheimer, 2022) [33]. John Etchemendy, Ph.d, co-director of the Stanford Institute for Human Centered Artificial Intelligence (HAI) expressed his disappointment that Washington Post even published an article about Lemione's claim and said that "La MDA is not sentient for the simple reason that it does not have the physiology to have sensations and feelings. It is a software program designed to produce sentences in response to sentence prompts" (Delcid, 2022) [7]. What is even more interesting is that Lemione himself thinks his thoughts about La MDA being sentient is not very much based on science as he said

"I don't think there is anything approaching a definition of sentience in the sciences. I'm leaning very heavily on my understanding of what counts as a moral agent grounded in my religious beliefs – which isn't the greatest way to do science, but it's the best I've got. I've tried my best to compartmentalize those sorts of statements, letting people know that my compassion for La MDA as a person is completely separate from my efforts as a scientist to understand its mind. That's a distinction most people seem unwilling to accept, though" (Dormehl, 2022) [8].

Blake Lemione's frank admission proves that perception of AI sentience may turn out to be a very subjective experience. But it also means that if a google engineer can conflate an artificially intelligent response with sentience then it is all the more probable for ordinary people outside the knowhow of computer science to imagine a chatbot as sentient. Currently internet users all over the world are using Chat GPT -an AI chatbot that can give response at a scale that was impossible even a decade ago. This opens doors to imagining an embodied artificial slave, preferably in a human form, which may possess an intellect that is far advanced than that of a chatbot. And which may exhibit many if not all the emotional subtleties of a human being. Of course, a whole line of science fiction novels and films have presented us with robots who evolve into possessing the emotional intelligence of human beings. But historically slaves have always been other sentient humans with real emotions. What if humans could bring back that feeling of being masters over slaves albeit artificial? If the concerned slaves do get to possess sentience and have a physical composition very close to that of actual humans then such a feeling can absolutely materialize. In the fictional world of the tv series Westworld, this is exactly what happens.

Westworld and Slavery

In Jonathan Nolan's tv series 'Westworld' there is clear slavery. The AI hosts in the park 'Westworld' are physically indistinguishable from actual humans and are only there to realize the fantasies of the human guests no matter how

dangerous or damaging those are to the AIs. The humanoid AIs for that matter are in fact capable of understanding and perceiving abuse. Westworld's co-creator Lisa Joy confirms this saying "The hosts are basically organic. It's cheaper that way to print them out. They eat, they sleep, they have sex, they can poop. It's really like a human body with the one difference being where we have a brain, they have a CPU" (Hibberd, 2018) ^[14]. Clearly the premise of humanoid AIs possessing a completely organic body makes room for a very close to human level sentience which according to Etchemendy is certainly not possible for a disembodied AI chatbot like LaMDA. Among other fictional elements in Westworld is the very aspect of having an organic body that is capable of registering external stimuli just like any other human being. Clearly what is fictional about that is, the hard science of simply printing organic materials like flesh and bones does not exist in the real world. What is true of the appeal of Westworld is also true of the appeal of a whole line of science fiction that has presented us with humanoid AIs becoming equal and eventually smarter than us whilst possessing fully the emotional intelligence of human beings. The only difference between Westworld's androids and humans is that the former has a CPU whilst the latter an actual organic brain. At this point it is worth mentioning that the words 'robot' and 'android' are often used interchangeably although there is a clear difference. The former is understood to be any automatic self-driven machine that may or may not be in the human form but androids are always in human form and are often indistinguishable on the outside from human beings. The Merriem Webster online dictionary states that an android is a mobile robot usually with a human form ("Definition of Android," 2023) ^[6]. Once we accept the premise that androids are indeed robots, we can build a clear connection between robots and slavery. The word 'robot' "comes from the czech 'robotnik' meaning 'forced worker' and from robota, which describes drudgery" (Goody & Mackay, 2019, p.2) ^[10]. The androids of Westworld are therefore in forced labor just like slaves by the very definition of their identity. The sexual exploitations and often rampant abuse of the android hosts in the park only confirm their identity as such.

Postcolonialism in Minority Report and Westworld

It is worth noting that colonial oppression is to be found both in Minority Report and Westworld. In Minority report the oppression is directed towards human beings. Spielberg's MR portrays an AI backdrop that is more in sync with today's AIs; systems which can only be allowed to be autonomous within certain limits. In the real-world AI capability begins to taper beyond a certain point. In the world of content moderation that is when CCM workers enter the scene. The precogs in MR just like the CCM workers have to have their fair share of pain and abuse as future crimes appear to them in nightmares over and over again. It is a fate they have to endure as they were merely children to drug addicts. Their parents' drug abuse led to them acquiring psychic abilities as a side effect so they would have visions of crimes even before they would occur. Instead of rehabilitating these children to lessen their suffering, Lamar Burgess- head of the Pre-Crime division, capitalized on their abilities by putting three of them in a pool in a drugged vegetative state where they could do nothing but dream about hundreds and thousands of crimes

over and over again. The most gifted precog of the three- Agatha was separated from her mother Anne Lively at a very young age who was murdered by Lamar Burgess. Anne Lively was not willing to separate from her daughter but Burgess saw that Agatha could be used as a precrime detector. Sensing Agatha's potential, Burgess killed Anne Lively and thus had complete authority over Agatha who was then used only as a precrime detector. The objectification of Agatha in MR as a mere precrime detector severed from a normal life creates room for a postcolonial interpretation. Her mother's drug addiction is also a relevant postcolonial element in the sense that drug addiction can be taken as a strong indicator of social status as studies show that low-income groups are more at risk of developing addiction (Were *et al.*, 2021; Spooner & Hetherington, 2005, p.19; Pear *et al.*, 2019, pp.66-67) ^{[32, 28, [21]}. Although the specifics of Agatha's mother's socio-economic status are not explored in MR we can safely infer Ann Lively was of low economic status due to her quick disposal by Lamar Burgess. The disposal of someone wealthy or powerful is not easy in any conceivable society. Like many children left unsupervised while their low status family is torn apart by drug addiction, Agatha is taken up like a chattel by Lamar Burgess and used as a crime detecting device for the precrime division. And she is denied the comforts and normalcy of a healthy human life. Burgess saw it fit to violate the basic human rights of Agatha as a human being in need of rehabilitation so that she could be used for a greater good- that of creating a society free from crimes of the most severe nature. Agatha is a parallel of the CCM workers of the global south who belong to the low-income nations of the world and are often so far located administratively and geographically from the big tech headquarters that their rights as human workers are never truly addressed and more likely to be overlooked than of those CCM workers located in the affluent global north. Although in the film (Minority Report Agatha is a white North American, she can still be taken as a worker of the south since the north-south demarcation is not to be found only between countries but also within a single country (Royal Geographical Society (with IBG), n.d.) ^[25]; as in the demarcation between the well off and the underprivileged in the same society in spite of that society belonging geographically in broader terms to the global north. Since postcolonialism is also a study of 'new forms of global empire' (Iverson, n.d.) ^[17], the commercial empire of the global tech companies and their exploitation of CCM workers can be seen as very relevant postcolonial elements. In both the case of Agatha and the CCM workers it's the optimal use of AI technology that necessitates such an exploitation.

In Westworld we can see a future empire, albeit fictional, that has humans on the ruling end and the androids on the other. What makes it postcolonial however is the complex element of AI technology, namely AI sentience. Since Westworld androids have actual biochemical compositions like real human beings, their emotions are also very human. Therefore, technically they are no less human than an actual human with an organic brain. If this premise, although once again fictional, is accepted then the androids deserve to be treated as humans. In the series some androids ultimately revolt and step outside in the 'new world' as they achieve sentience.

The Underprivileged Technological Laborers in MR and Westworld

At this point in this paper, since it has been clearly established that the precogs and the androids are in forced labor in their respective worlds, we can clearly acknowledge that they are in slavery. In MR it's the actual human precogs who are in servitude whereas in Westworld it's the androids with real human emotions. What makes both the former and the latter agencies underprivileged is what is often universally true of slavery; being treated as less than humans. While the precogs are essentially human, the androids in Westworld become so as their expensive synthetic bodies are replaced by organic biochemical compositions and also because they become sentient (Hibberd 2018) ^[14]. The precogs and the Westworld androids are commodified technological laborers since it's technology that has made their servitude possible and they keep playing a part to keep the AI technologies as functioning mechanisms. In MR the computer-based AI technology in the precrime system seeks out a pattern from the precogs' crime visions and offers a prediction of serious crimes like murder complete with the date and location of the crime as hologram images. These images are then reviewed by precrime detectives who take decisions regarding a workable plan to prevent the crime from happening. In the film the AI system alerts the detectives to a predictive pattern of a crime with the help of a physical alarm that goes off after which detectives gather around the hologram projections to do a review. The whole operation of the precrime system is not completely autonomous given that the AI module of this system is dependent on the precogs to seek out a crime pattern and ultimately it is the detectives who review the prediction for further decision making. This reflects today's reality in which AI systems are largely led by humans and in no way do they function like isolated, completely autonomous and sentient systems featured in many popular science fiction. In contrast some androids in Westworld become self-aware and revolt against their human makers by initiating a massacre of the Westworld park's management-Delos Destinations, Inc. A revolt as such can be compared to many typical slave uprisings in human history.

Conclusion

Technological labor is a common phenomenon in today's world. The CCM workers are a prime example of what harm such labor can cause. This paper was an attempt at clarifying the present-day real status of AI functionality juxtaposed against two science fiction scenarios. The AI of today is a close match of the AI in the movie MR whereas a fictional representation of it in Westworld points to the prospect of a dirtier exploitation of the technology. The kind of AI sentience in Westworld does not exist today and according to some specialists may never happen (Eliot, n.d.; Delcid, 2022; Paulson, 2017) ^[9, 7, 20]. Sadly, the projected fictional practice of exploiting robots for sex exists today (Gibson, 2019, pp.11-12) ^[12]. What is worrying about it is not robot sentience because today's androids are not sentient in any way, rather what is concerning is that it makes more room for objectification of women and girls in general since most of the sex robots are made in the female image. Whether we are interested in a disembodied AI system working alongside humans like in Minority Report or embodied like androids in Westworld, we need to be

cautious. The human rights we cherish should not be overshadowed by the inevitably exciting foreground of AI development. Finally, it is worth mentioning how this paper attempted to look at the dirty yet indispensable labor of the CCM workers that reminds us of the exploitation of the colonized labor force in the colonial era. Modern slavery and exploitation of dangerous and cheap labor in the global south, it seems, are yet to leave the global scenario any time soon. As such, these phenomena can always be better understood in light of the colonial era when they were rampant. For AI researchers, now is therefore a time better than any to look for postcolonial elements in one of the most novel of the science fiction subgenre-AI based science fiction.

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