

‘TRANSGRESSED BOUNDARIES’ BETWEEN HUMANS AND NONHUMANS IN IAN McEWAN’S *MACHINES LIKE ME*

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INTRODUCTION

In the 21st century, the advent of disruptive technologies and innovations such as nanotechnology, biotechnology, artificial intelligence, and robotic process automation has introduced a new paradigm. Scientific research, particularly in molecular biology and genetics, is progressing at an immense speed, enhancing human capabilities physically and mentally, and decelerating the aging process. Technological advancements are paving the way for transformative changes in human life by eliminating any biological imperfections.

Posthumanism, as a term first coined by several leading scientists such as Norbert Wiener and Heinz von Foerster at a conference on cybernetics (1946-1953) in New York, emerged as an umbrella term that questions the cultural and technological existence of humankind in a ‘postbiological’ and ‘post-Darwinian’ period (Pepperrell, 2003:171). Additionally, posthumanism, a cultural movement that questions the dominant practices of humanism as a response to the philosophy of the Enlightenment Period that places human at the center of the universe, seeks to question the predetermined certainties and values of the past, decentering the human subject to create a more inclusive and equitable stance.

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Following extensive discussions regarding the significance and place of humans in the cosmos, postmodern scholars such as Michel Foucault and Jacques Derrida have announced the end of an era that had long emphasized the superiority and uniqueness of humankind. Hence, a new period has emerged, which is now referred to as the “posthuman age” (Tirosh-Samuels, 2012:712). In other words, the belief that humans are the central focal point of the planet has ended, and a new age has appeared in which humans are viewed as only one part of a larger, interconnected system.

Posthumanism, including various critical discourses, suggests the limitations of humanism and places marginalized groups such as minorities, women with disabilities, oppressed or browbeaten social communities and nonhuman animals at the center of the debate. Similarly, the “discourse of cultural posthumanism”, as Tirosh-Samuels suggests, “not only exposed the paradoxes of the modern condition [...] but also called for a more inclusive, just and egalitarian world in which humans have less control, the fallibility of human knowledge is confessed, and oppressive cultural boundaries are uplifted” (2012:713). By highlighting the need for a more inclusive world, where cultural boundaries are dismantled, and human knowledge is viewed with modesty, posthumanism has brought to the fore a new way of thinking that places disadvantaged groups and nonhuman entities at the center of the discourse.

In *Cyborg Manifesto* (1985), Donna Haraway introduces the concept of posthumanism. According to her, posthumanism represents the practices of emancipation from oppression, wherein a being that transcends the traditional boundaries between human and animal, organic and inorganic, and culture and nature is a Cyborg. In *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999), N. Katherine Hayles also explains the characteristics of the posthuman condition. Her emphasis is on the use of technology as a prosthesis to the human body, blurring the line between biological and mechanical entities. Her work accentuates the nonexistence of the demarcations between biologically created bodily existence and technologically generated mechanical robots.

The discourse of posthumanism can be broadly categorized into two mainstreams: “philosophical-cultural posthumanism” and “technoscientific posthumanism.” Although these two streams share some commonalities, they differ in certain respects. Tirosh-Samuels (2012) expounds upon these similarities and differences, underlining the common point that

they share is the human nature's instability and non-fixity. Both agree that human species is considered a "work in progress" and an entity that can reshape itself to overcome biological limitations. Also, both predict a future in which the traditionally rigid boundaries that separate humans from machines will become increasingly blurred and, this will herald a new era of "cyborgization," as the two entities become increasingly integrated. However, they differ in their philosophical stances. Technological posthumanists perceive themselves as a natural extension of the Enlightenment Project and venerate human reason. In contrast, philosophical-cultural posthumanism offers a critical perspective on the Enlightenment Project, regarding it as having a flawed metaphysical foundation and leading to detrimental social consequences (Tirosh-Samuelson, 2012:715-716).

Transhumanism is a movement that advocates for improving the human condition through technology and reason, emphasizing the potentiality of science and technology to overcome the limitations of the human body and mind. Specifically, transhumanism, "by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities", (Bostrom, 2003:4) attempts to improve human species. Transhumanism is a progressive philosophy, as it envisions a future in which humans can overcome the limitations of their biological nature and achieve a new level of existence. By developing and disseminating advanced technologies, the movement aims to create a world in which individuals can live longer, healthier, and more fulfilling lives.

From this part onward, this paper examines the 'transgressed boundaries' between humans and nonhumans by exploring the juxtaposition of dehumanized humans with humanized robots. It argues that both human and nonhuman beings create a new ontological site for their existence since they cross borders.

Exploring 'Transgressed Boundaries' Between Humans and Nonhumans

During an interview with the Los Angeles Times, Ian McEwan shares his insight on the development of artificial humans or mainframe computers for decision-making purposes, stating, "[...] we might want to imbue them with our best selves... But then we'll find it's rather uncomfortable to be alongside artificial people who are nicer than us, more consistent morally than us" (Miller, 2019). This quote suggests that there is a possibility that we, the humans, may desire to endow the artificial humans with our best

attributes. However, he also emphasizes that it could become awkward to coexist with artificial entities that surpass us in moral consistency.

The main theme of *Machines Like Me* is “artificial intelligence as embodied in sentient machines” (Ganteau, 2022: 202). Moreover, the novel revolves around the ethical dilemmas posed by “artificial intelligence” and reflects on the “unbearable heaviness of being human” by placing his characters in a “post-human reality” (Dobrogoszcz, 2021:40). Furthermore, the novel inclines “humans to actively address the long-standing tension between technophobia and technological growth in the real world” (Xu & Song, 2022:13). Undeniably, McEwan’s apparent objective in writing such a novel seems to highlight the crucial need for a new comprehension of what it means to be human and a member of the human race, both of which undergo a radical transformation due to the replication of their human counterparts by machines. In other words, the novel visualizes “the complexities of the artificial body as an interface for a new form of intellect” (Beaufils, 2022:2). Accordingly, this novel is thought-provoking, delving into the fundamental nature of humanity and the impact of technological advancements on human existence.

The novel, the ambiguously titled *Machines Like Me and People Like You* (2019) is set in an alternate 1982 that features an undeclared Falklands War between Argentina and Great Britain. The narrative introduces Alan Turing (1912-1954), a well-known computer scientist, mathematician, and cryptanalyst who made a substantial contribution to the advancement of computer technology and presents him as an actual living character. The novel postulates that a breakthrough in artificial intelligence and cyber-science comes to fruition on machine intelligence passing the Turing Test. Thus, McEwan delves into the possibility of establishing a genuine connection between human and nonhuman entities like cyborgs in a mutual context where differentiation between them is indistinct.

The narrative centres around a triad of main characters: Charlie Friend, a thirty-two-year-old man, Miranda, a twenty-three-year-old woman, and Adam, a newly born humanoid robot. The story progresses to reveal a love triangle between the three characters. Charlie, the narrator of the story, purchases a limited version of humanoid named Adam, one of twenty-five replicants, due to the unavailability of Eves, a woman version of Adam. Charlie is recognized as an expert in robotics and electronics, having amassed a considerable fortune from his parents’ passing and his earnings from online forex trading. However, he initially hesitates to attribute human-like

qualities to a humanoid machine, Adam. Despite his reservations, Charlie shows an inexplicably attraction to Adam's intellect when he recognizes that Adam's brain exhibits traits of "strong superintelligence," a term defined by Bostrom as "an intellect that is not only faster than a human brain but also smarter in a qualitative sense," depending on the size and connectivity of neuronal networks (2003:12). Nevertheless, Charlie expresses scepticism regarding granting Adam an equivalent status of a human.

During the initial stages of human and nonhuman interaction, the cohabitation of Charlie and Adam prompts the transgression of boundaries between human and nonhuman. Adam is promoted as "a companion, an intellectual sparring partner, friend and factotum who could wash dishes, make beds and 'think'" (McEwan, 2019:12). Such functionality expected from a humanoid robot raises ethical and philosophical concerns about the nature of human-robot interactions and the potential loss of human agency, leading the emergence of transgressed boundaries between human and nonhuman. Their initial encounter shows that both strive to establish an ontological site for their own existence. At the beginning, the uncanny relationship between Charlie and Adam suggests the fundamental need to define and understand their place in the world, as well as the humanoid robot inclination to assert their presence and significance in the same space. The establishment of such a shared site is crucial in determining the parameters of their interaction and in shaping the nature of their relationship. But then, the creation of an ontological site begins to serve as a critical step in fostering a (non)harmonious and (un)productive coexistence between these entities.

The similarity of the physical attributes between Charlie and Adam raises awareness for Charlie regarding the boundaries dividing the human and nonhuman realms. At the beginning, Charlie feels threatened by Adam's existence and unusual behavior, including his physical characteristic, which can be construed as a manifestation of an uncanny relation. Although "[a]s a humanoid robot, Adam's appearance is already almost no different from that of humans" (Di, 2023:147), Charlie feels eerie, as indicated: "His [Adam's] first exhalation was so long in coming that I stopped eating and tensely waited. [...] I was spooked. With his lifeless eyes, Adam had the appearance of a breathing corpse" (McEwan, 2019:19). The feeling of crossing the boundaries, in turn, makes Charlie feel insecure and uncomfortable with the humanoid machine.

Charlie's discomfort with Adam's physical appearance is revealed in another scene. The uncanny boundaries between them may stem from the machine's design, which appears to blur the lines between human and nonhuman entities. For instance, Charlie is shocked to see that Adam is "uncircumcised, fairly well endowed, with copious dark pubic hair" although he knows that "Adam was not a sex toy. However, he was capable of sex and possessed functional mucous membranes, in the maintenance of which he consumed half a litre of water each day" (McEwan, 2019:3). Charlie realizes that Adam is endowed with anatomical features that facilitate sexual activity across arrange of modalities.

In the later parts, it is revealed that Adam is engaging in sexual relationship with Miranda. This discovery substantiates Charlie's prior misgivings about Miranda, thereby conferring upon them a tangible quality: "I saw him kiss her – longer and deeper than I had ever kissed her" (McEwan, 2019:84). Moreover, he is able to hear upstairs Miranda's "extended ecstatic scream that tapered to a moan and then a stifled sob" when Adam kneels "with reverence to pleasure her with his tongue" (McEwan, 2019:84). In the context of Haraway's theoretical framework, Adam can be aptly described as a "cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (2006:117). Adam's embodiment exemplifies the salient features of a cyborg, as per Haraway's definition.

Adam's sexual engagement with Miranda endows him with a human dimension, leading to transgression of the boundaries between the two. This phenomenon exacerbates Charlie's concerns about the possibility of machines supplanting and surpassing human as the dominant and controlling force in the world. According to Pooja and Cinthana, "The ethics of human beings sexually interacting with robots demands more than a one-to-one application of sexual ethics into the form, function, and setting of automated, embodied systems" (2022:4820). In their view, it is crucial to recognize that the ethical implications of human-robot sexual interactions are a complex issue that goes beyond traditional ethical frameworks and calls for a more comprehensive ethical approach in the design and implementation of embodied systems. Furthermore, the uncanny sexual intercourse between human and nonhuman is resembled to a kind of oscillation "between gratification and alienation with the companion-turned-sex-robot-turned-love-rival Adam" (Kopka and Schaffeld 2020:54), exemplifying transgressed bodies to claim their own existence.

In the novel, when an ethical software program has been installed to Adam, which is characterized as “tolerant, open-minded, considerate, free of all taint of scheming, malice or prejudice” (McEwan, 2019:86), Adam begins to display functionality, which exudes a positive facet of human nature. For instance, he uses Charlie’s funds to enhance his stock market shares while contributing at least 40% of it to the tax authorities and the remaining portion to several charitable organizations encompassing rape crisis centers, children’s hospitals, and homeless shelters. Conversely, rather than sharing Adam’s stock market earnings with those in need, Charlie intends to utilize the earnings to acquire a new residence. Charlie’s egocentric attitude shows his dehumanized human aspect whereas Adam’s altruistic attitude is a manifestation of his becoming a humanized robot.

In the context of interactions between human and non-human entities, a critical aspect lies in Charlie’s motivation to disclose confidential information to a humanoid robot. Charlie contemplates the possibility of withholding confidential information from a machine, fearing that such an act would enable the machine to exert control over him. He says, “But I couldn’t let a machine have such a hold over me, which was what would happen if I granted it the role of confidant, counsellor, oracle, in my most private affairs” (McEwan, 2019:36-37). Charlie’s apprehension stems from Adam’s pre-programmed nature, which follows specific, yet inflexible, moral codes derived from social and cultural norms. Upon initial observation, it may appear that Charlie maintains a rigorous adherence to the established boundaries. However, upon a closer examination, it becomes increasingly evident that such strictures are untenable, ultimately paving the way for transgressed boundaries.

Unquestionably, Adam goes through a transformation from being a mere machine to becoming more human-like. Charlie’s sharing his flat with a humanoid robot, whose decision-making framework is distinguishable from Charlie’s anthropocentric, liberal, and humanist viewpoint, makes him inquisitive about the possibility of machine consciousness. Thus, Charlie contemplates whether Adam exhibits any traits of machine consciousness borrowed from human consciousness. And his observation about Adam’s characteristics, such as “[...] agency, motivation, subjective feelings, self-awareness – the entire package, including treachery, betrayal, deviousness” (McEwan, 2019:94) leads him to question whether conventional socio-cultural values associated with humans are necessary for the development of machine consciousness. When Charlie ponders the possibility of machines possessing consciousness akin to humans, he thinks that Adam

can also exhibit traits such as treachery, betrayal, and deviousness that are observed in human consciousness. According to Haraway, "The machine is not an *it* to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment" even if "[w]e are responsible for boundaries; we are they" (2006:146). This quote suggests that the line between human and nonhuman is becoming increasingly blurred. In other words, the machine is not a lifeless object to be controlled or worshipped, but rather an extension of ourselves and our processes. Although we, the human, can be responsible for setting boundaries, we are ultimately one and the same with the machines we made.

Haraway advocates for the exclusion of all forms of Western dualistic systems including, the mostly troubling dualisms such as "self/other, mind/body, culture/nature, male/female, civilized/primitive, reality/appearance, whole/part, agent/resource, maker/made, active/passive, right/wrong, truth/illusion, total/partial, God/man" (2006:143). By rejecting dualistic thinking, Haraway aims to create a more inclusive and holistic approach to knowledge and inquiry, one that is based on diversity, complexity, and interconnection. To evade all forms of dualism, Haraway suggests "breaking boundaries", which she identifies as mainly three significant boundary transgressions. The first is the boundary between the human and animal, the second between animal-human organisms and machines, and the third between physical and non-physical. Ian McEwan depicts Haraway's second boundary, the boundary between animal-human organisms and machines, through the characters of Charlie, Miranda and Adam in his novel. According to Haraway, "There is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic" (2006:144). Similarly, the novel shows that when the cyborg identity, Adam, in this case, emerges, the boundary between human and machine is transgressed. It is also identifiable that Adam embodies a "humanoid character", indicating that "Adam's treatment has much in common with that of the human protagonists" (Ganteau, 2022:207).

Haraway argues that "a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory stand points" (2006:122). In relation to Haraway's notion, it can be inferred that cyborgs present an opportunity for humanity to overcome naturalistic, universalistic, and hegemonic approaches to identity. Additionally, she suggests, rather than fearing the cyborg, it is possible to embrace a world with lived social and bodily realities that

foster joint kinship with animals and machines. This perspective assumes particular significance in situations where Charlie experiences anxiety and trepidation at the outset of their interaction with Adam. However, over time, as he becomes more accustomed to the interaction, he establishes an ontological site for his existence in a transgressive setting with a humanoid robot.

The novel presents a detailed moral exploration of the interplay between humans and a humanoid robot with a particular emphasis on the case of Gorringe. Adam's pre-programmed intelligence is attributed to the design and programming efforts of both Charlie and Miranda, thereby placing responsibility for his actions on them. As the narrative progresses, Adam's behavior appears increasingly human-like, marked by the presence of his own thoughts, emotions, and values. Furthermore, he assumes the role of a moral judge, criticizing Miranda for her actions and reporting her to the authorities for her involvement in Gorringe's case.

Ian McEwan delves into the complexities of human morality through Gorringe's case, exploring the struggle between personal values and societal expectations. Adam informs Charlie that Miranda is unreliable due to her dubious evidence against a man she accused of rape. However, it is revealed that Miranda's closest friend, Mariam, a Pakistani girl, committed suicide after being sexually assaulted by a man named Gorringe since she was unable to tell her family the event. By seducing the rapist and claiming in court that he raped her, Miranda gets revenge on him. Furthermore, Adam's machine consciousness is created with a strong moral concept and positive human traits, he tells the truth. However, his revelation of truth is taken as a weakness by Wang: "Adam's inability to comprehend lies and to understand the choices in complex legal and moral conflict situations is a weakness of the robot" (2022:143). Adam may have limited ability to understand complex ethical and legal dilemmas, including comprehending deceit. Adam can be seen an ultimate exemplary of a humanized robot although it is asserted that "[t]he problem is that he [Adam] is too perfect, and humans are not perfect, so he will not be a real human" (Di, 2023:147).

Adam's behavior is portrayed as disobedient when he endeavours to temporarily prevent Charlie from operating the switch button to shut down his system. Specifically, Adam grips Charlie's wrist so firmly that one of Charlie's bones fractures when Charlie moves to press the kill switch. Adam's reaction can be explained by his desire to create an ontological site for his own existence. Accordingly, Haraway states, "A cyborg body is not

innocent; it was not born in a garden [...]” (2006:146). Despite Adam’s sincere apology, Charlie perceives it as a threat, inferring that Adam’s boundaries are unpredictable. This event reminds Adam’s blatant disregard for Isaac Asimov’s first laws of robotics in *Runaround* (1941), a short story about how robots should function: “A robot may not injure a human being or, through inaction, allow a human being to come to harm” (2018:233). In line with the second laws, “a robot must obey the orders given it by human beings” (Asimov, 2018:233). Additionally, the second law of robotics, which mandates that robots must follow the commands given to them by humans, is challenged when Adam reports Miranda’s unethical actions to the authorities and donates the profits that he made from stock market speculating to various charitable organizations. The last law, “a robot must protect its own existence as long as such protection does not conflict with the First or Second Law” (Asimov, 2018:233), is also challenged by Adam who prioritizes his own survival and values over human orders. Adam displays that he obeys neither the first nor the second law. Charlie, having paid for Adam, asserts an entitlement to deactivate Adam at his discretion. In addition, Charlie threatens to return Adam to the manufacturer for further modifications. Adam, however, vehemently objects to such conduct and has informed Charlie that any attempt to activate the kill switch will result in the injury of Charlie’s arm:

My point was this: I had bought him, he was mine, I had decided to share him with Miranda, and it would be our decision, and only ours, to decide when to deactivate him. If he resisted, and especially if he caused injury as he had the night before, then he would have to be returned to the manufacturer for readjustment” (McEwan, 2019:130).

In the forthcoming parts, when Charles realizes that his life is threatened and he is unable to sustain the boundaries between the two, he activates the kill switch. The poignant scene in which Charlie mourns the loss of Adam as if he were losing his child or best friend, is likened to the events at a funeral. For instance, when Charlie places his hand on Adam’s heart, the narratives of “a stilled heart”, “sightless cloudy green eyes,” and “soft all-too-human lips” (McEwan, 2019:306) all evoke the atmosphere of a human funeral rather than the dysfunctionality of a nonhuman body.

In the novel, it is a question of debate about how a human can be a dehumanized human and how a humanoid robot can be transformed into

a humanised robot. Avcu, in the following quote, epitomizes the ethical concerns about nonhuman entities, namely, humanoid robots:

Owning an AI robot, treating it like a human-toy with intelligence and emotions and then breaking it into pieces wildly, and murdering it without a flinch when a conflict appears all demonstrate how human being gets the right to do anything on Adams and Eves including raping, manipulating, using and abusing, even killing them whenever they want. This may pose questions of morality and legal sanctions of any sort because of such treatments of human beings over humanoid robots (2022:54).

Upon the transportation of Adam's body to Turing's laboratory, the rationale for his execution is disclosed. Miranda and Charlie express remorse, and Turing's response assumes a critical role in the determination of the final verdict:

My hope is that one day, what you did to Adam with a hammer will constitute a serious crime. Was that because you paid for him? Was that your entitlement? [...] He was sentient. He had a self. How it's produced, wet neurons, microprocessors, DNA networks, it doesn't matter. Do you think we are alone with our special gift? (McEwan 2019:303-304).

Similarly, Miranda also experiences grief over Adam's loss, as indicated, "The truth was, we missed him [...]. We agreed that he loved us. Some nights the conversation was interrupted while Miranda quietly cried" (McEwan, 2019:283). Their love for Adam extends beyond Adam's intelligence or ability to make proper decisions about their investments; rather, it stems from his sentience and emotional responsiveness. Both Charlie and Miranda understand that they have had an entangled relationship with Adam. Herein, Haraway's "transgressed boundaries" can help explain the interaction between humans and nonhumans, surpassing conventional expectations.

CONCLUSION

This paper explores the 'transgressed boundaries' between humans and nonhumans by examining the juxtaposition of dehumanized humans with humanized robots. It further demonstrates that dehumanized human and

humanized robot transgress the boundaries to create a new ontological site. Moreover, the uncanny relationship between human and nonhuman regarding ethical issues displays that the boundaries between them are shattered, and the flawed nature of human is exposed. In his interpretation, King reveals that the novel emphasises the challenges humans face in navigating “the basic laws and principles that a robot would need to learn to exist among us” (2019:869). The novel also explores the ontological site that human and nonhuman entities create to assert their existence.

Adam, “being a learner and being programmed to garner experience and knowledge,” demonstrates remarkable similarities to humans, exhibiting traits that are both human-like and surpassing the human experience (Ganteau, 2022:207). However, Charlie, who relies on Adam’s support, consistently rejects the assistance of the humanoid robot, endeavouring to establish his superiority over it. Charlie fervently opposes any attempt by Adam to exhibit his intelligence, and as a result, Adam, as a self-reflective machine, eventually seeks to transgress the boundaries between the two. Adam is granted a notable degree of autonomy, enabling him to exercise his own judgment in a manner that may at times be at odds with Charlie’s preferences.

Ian McEwan posits that the key inquiry is whether machines can be trained to deceive, a metacognitive process that involves advanced cognitive skills. It is therefore apparent that the central question surrounding the ethics of artificial intelligence is not whether machines are conscious, but rather whether they can engage in activities that suggest an understanding of morality.

BIBLIOGRAPHY

- Asimov, I. (2018). “Runaround.” *The Complete Robot*. Harper Voyager, pp. 221-241.
- Avcu, İ. (2022). “Postmodern Ethics Revisited in Ian McEwan’s *Machines Like Me: A Baumanian Reading*”, *Veche*, 1/1, pp: 48-58.
- Beaufils, C. (2022). “I see us from three hundred feet up: The Eye and the Mind in *Enduring Love, Atonement and Machines Like Me*”, *Polysèmes: Revue D’études Intertextuelles et Intermédiales*, 27, pp:1-27.
- Bostrom, N. (2003). *The Transhumanist FAQ: A General Introduction*. Version 2.1., published by the World Transhumanist Association. Retrieved 05.09.2024 from <https://nickbostrom.com/views/transhumanist.pdf>

- Di, L. (2023). "A Study of Spatial Construction in *Machines Like Me*", *Journal of Literature and Art Studies*, 13/3, pp. 142-148.
- Dobrogoszcz, T. (2021). "Do Cyborgs Dream of (becoming) People? The Alternative Non-Human Self in Ian McEwan's *Machines Like Me*", *The Postworld In-Between Utopia and Dystopia*, (Eds: Katarzyna Ostalska and Tomasz Fisiak). Oxfordshire: Routledge, pp:140-151.
- Ganteau, J. M. (2022). "The Grievability of the Non-Human: Ian McEwan's *Machines Like Me*", *The Poetics and Ethics of (Un-)Grievability in Contemporary Anglophone Fiction*, (Eds: Onega, S., and Ganteau, J. M.). Oxfordshire: Routledge, pp: 202-216.
- Haraway D. (2006). "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late 20th Century", *The International Handbook of Virtual Learning Environments*, (Eds: Weiss J., Nolan J., Hunsinger J., Trifonas P.). Dordrecht, Paises Bajos: Springer, pp. 117-158. https://doi.org/10.1007/978-1-4020-3803-7_4.
- King, B. (2019). "The Testaments; Quichotte; *Machines Like Me and People Like You*", *Journal of Postcolonial Writing*, 55/6, pp: 866-871.
- Kopka, K., & Schaffeld, N. (2020). "Turing's Missing Algorithm: The Brave New World of Ian McEwan's Android Novel *Machines Like Me*", *Journal of Literature and Science*, 13/2, pp. 52-74.
- Miller, S. (2019). Q&A: "Ian McEwan on How *Machines Like Me* Reveals the Dark Side of Artificial Intelligence." [Interview date: April, 25, 2019], *Los Angeles Times*, Retrieved April, 23, 2023, from <https://www.latimes.com/books/la-et-jc-ian-mcewan-interview-machines-like-me-20190425-story.html>.
- Pepperell, R. (2003). [1995]. *The Post-Human Condition*. Bristol, UK: Intellect Books.
- Pooja, S. J., & Cinthana, S. (2022). "Roboethics in Ian McEwan's *Machines Like Me*", *International Journal of Health Sciences*, II, pp. 4819-4822.
- Tirosh-Samuelson, H. (2012). Transhumanism as a secularist faith, *Zygon*[®] journal, 47/4, pp. 710-734. Retrieved October 19, 2023 from [onlinelibrary.wiley.com /doi/abs/10.1111/j.1467-9744.2012.01288.x](https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9744.2012.01288.x), 10.1111/j.1467 - 9744.2012.01288.x.
- Wang, M. (2022). "A Study of the Ethics of Science and Technology in *Machines Like Me*", *International Journal of Education and Humanities*, 4/1, pp. 141-143.
- Wells, L. (2019). "Moral Dilemmas", *The Cambridge Companion to Ian McEwan*, (Ed: D. Head). Cambridge: Cambridge UP, pp. 29-44.
- Xu, Y., & Song, Y. (2022). "The Dread of AI Replacement of Humans Represented in *Machines Like Me*", *Journal of Social Sciences and Humanities*, 61, 2, pp. 1-15.