The Case of Thinking Machines: Posthumanism and Techno-Human Hybrydity in Children's Literature

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Introduction

Technological innovations in medical science, social media biotechnology, life extensions that fuse biology and technology have led to an unprecedented degree of intimacy and dependence between flesh and machine. Also, Ning De-Eknamkul points out that 'The changing relationship between man and machine defines the thinking machine' (2016: 60). This change in relationship is also manifest in fiction for children as the selected texts provide scope to deal with the ideas of thinking machines - a type of mechanical device thought to be capable of replicating human bodily motions, as well as function of human thought (Lausa, 2009: 5). This paper discusses how children's fiction presents child readers alternative ways of imagining interconnectedness between human and the machine that is suggestive of the cybernetic ontology.

Dan Gutman's *Homework Machine* (2006) and its sequel *Return of the Homework Machine* (2009) are examples of burgeoning ubiquity of technology in the lives of children and how in their everyday use of technology they derive pleasure and entertainment from it. They also engage with the complexity of technology with respect to the moral and ethical implications of the use to which it is put to. The narrative of the *Homework Machine* revolves around a group of fifth graders who come together because of a machine code named- 'Belch' that does their homework for them.

I love my Homework Machine: The Technophilic View of Technology

The homework machine is the brainchild of Brenton, one of the fifth graders in the Grand Canyon School. Brenton's reason for 'inventing' the homework machine is not because he is against doing his homework, but because he feels it is time consuming: 'Having the machine do the homework for me allows me to pursue other interests... There are only twenty four hours in a day

unfortunately, the homework machine gave me more time' (39). Brenton evokes the technophilic view of technology. The technophilic view looks at the relationship between technology and humans as one which is symbiotic, in the sense that, it conceives of the two as coexisting and coevolving. Also, this view recognizes technology as something that enhances human potential and performance. As Ian Barbour in his book *Ethics In an Age of Technology* suggests that technology liberates people from the confines of tradition, increases freedom, creative expression, leisure and offers greater opportunity for choice. For Brenton, the homework machine is 'just a tool to make a job easier' (2011: 63). When Brenton's friends get to know of the homework machine and get to use it, they also think that the nicest thing about Belch was that they get more time after school.

The technophilic views about technology such as that of Bruce Grenville consider technology as a tool to compensate for human fallibility or to enhance his functioning. He opines, 'We are constantly aided by machines, whether they are computers, vehicles, and military weapons that extend and amplify our presence in the natural world, or by medical prosthetics such as pacemakers, artificial limbs and eye glasses, that maintain and reinforce our existing physical body' (2001: 9).

Brenton's friends are described as having an immediate urge to use the machine or when they feel addicted to the machine, which further endorses the technophilic view. Sam feels that 'I *have* to find a way to use the homework machine to do my homework for me' (50). He justifies his urge because he feels that it is imperative and natural to switch to new forms of technology to make things easier: 'Why not? When cars were invented; people didn't keep using their horses and buggies, did they? When the telephone was invented, people didn't keep sending telegrams. When the computer was invented, people gave up their typewriters. Same thing here' (50). Judy, too doesn't want to go back to the old fashioned way of doing her homework. She compares it to how her mother never wants to go back to the old way of making popcorns in a big pot on the stove and stick to using the microwave instead.

Andy Clark, in his book *Natural Born Cyborg*, argues that our ability to merge with technology is what makes us human. He explains, 'What best explains the distinctive features of human intelligence is the ability to enter into deep and complex relationships with non-biological constructs, props and aids'

(2003: 5). These kids echo the sentiment that Clark emphasizes i.e the practical purpose of technology is to augment and expand the range of human capacity and functioning in the world.

Once Brenton tells his friends about the homework machine, their first reaction is utter disbelief. Sam thinks there can be no such thing as a homework machine that can do one's homework. Judy too felt it was impossible and too good to be true, it sounded like science fiction to her. However, once they see it working in front of their eyes, they do realize that the homework machine was for 'real'. For Brenton, it was never science fiction: 'It's not science fiction. It's pretty basic stuff really. I'm surprised nobody else thought of it before me' (43). Encoded with a certain truth and possibility, the homework machine renders 'the boundary between science fiction and social reality as an optical illusion' (Haraway, 1985: 149).

I'm obsessed with my Homework Machine: The Technophilic View of Technology

Once the kids start using the homework machine, one can read the impact of the machine on their lives and grades in the light of the technophobic view of technology. Within this view of technology, it is a potential force that can give rise to situations and scenarios wherein the face to face interaction between people becomes limited, and this distancing causes our moral obligations and responsibilities towards others to reduce considerably. This view perceives technology as hampering human ability to reason, even lead to a meaningless life as people become more and more addicted to machines. Furthermore, indiscriminate use of technology, could stifle human activity, uniqueness and individuality. As Barbour, presenting the technophobic point of view writes that technology can lead to an 'obsession with things' (14), Judy too iterates the sentiment when she finds herself addicted to Belch in the same way as her mother was addicted to cigarettes. She admits, 'I had stopped doing my homework on my own entirely' (79).

Barbour's claim that technology can compel uniformity and pose a threat to individuality and spontaneity, and can lead to more insistence on efficiency and rationalism at the cost of creativity and imagination (10-12) is best expressed when the fifth grade teacher Miss Rasmussen notices that Brenton, Kelsey, Judy and Sam's homework was 'remarkably similar, except for the

handwriting' (105). Also, suspicious after the school newspaper published a piece about rumours of a homework machine, she decides to take a surprise test. Sam and Kelsey fail the test and never getting a C in her life before, Judy, gets a C. All three score poorly despite turning in excellent homework.

In the same technophobic vein, Hubert Dreyfus, in his book *On the Internet*, argues that if left unchecked technology will deprecate the ability of humans to differentiate and assess information based on quality. People following Brenton's fads that he disseminates using the internet evince this aspect of technology. Brenton designs a software programme and spreads the words 'wear red socks to school on Thursday' and inserts them randomly into documents. 'I guess you'd call it virus because I sort of let it loose all over the internet and people passed it around' (63). Next the narrative tells that kids all over America wore red socks to school. Miss Rasmussen recalls this incident and says that, 'it didn't mean anything', she confirms what Dreyfus has to say about use of technology and cyberspace:

> When we enter cyberspace… and thereby gain a remarkable new freedom never before available to human beings, we might, at the same time, necessarily lose some of our crucial capacities: our ability to make sense of things so as to distinguish the relevant from the irrelevant… and our need to get a maximum grip on world that gives us our sense of reality of things. (67)

Technology, according to Dreyfus, could lead to a life without meaning (7). The way in which Brenton repeatedly uses the internet to spread fads such as the 'inside-out day' and even begins a cult called 'Canyonism', validates Dreyfus' concern. As soon as the Canyonism website is up he receives an instant message from a man who wanted to be a canyonist because 'he had been searching his whole life for something to believe in, and that Canyonism was the first thing he'd seen that made sense' (Gutman, 2009: 49).

I want a Homework Machine too: Technology and the Power Equation

Because of what Brenton could do using the internet and with the homework machine makes him seem powerful to others. His friend Sam thinks of Brenton as 'this one kid (who) took his computer and with a few keystrokes got just about everybody in

America to do this dumb thing. It was cool! And this kid was sitting next to me. Think of the power!' (Gutman, 2006: 66) Ronni Teotwawki, another fifth grader, suspicious of the growing intimacy of the group and their secret homework machine, thinks that it was unfair to those who didn't have the machine to do their homework for them. He breaks into Brenton's house to find out if they 'really did have the machine since he felt why should he have to sit for hours doing his homework while somebody else can just push a button and have the machine do it for them'(109). Frederick Ferre in his book *Philosophy of Technology* asserts that technology certainly involves knowledge and values, it speaks of what people want and want to avoid, and what they think to be legitimate ends and means (1995:11). He also points out that, 'Since it is in the nature of technology to increase the range of human powers, the associated range of questions for which human beings must assume responsibility varies with the available technology (1995:11). The allure of one class mate having access to a homework machine propels Judy and Snik to think if it is fair that Brenton's got a machine that does his homework for him. Even though Judy gets As and makes it to the honour roll every year without the machine, Snik gets her thinking that 'it's not exactly fair' since between her and Brenton the 'playing field wasn't level' (Gutman, 2006: 52). Ronnie, Judy and Snik's insecurity about it being 'unfair' that Brenton has a machine to his homework while they slogged to do it, speaks to a larger concern about increase contact and interaction between people-those who have more or less access to technology, those who have incorporated more or less technology into/onto their body or daily lives.

Should I have used the Homework Machine: Technology and Ethical Concerns

The narrative evokes the ethical concern related to the use of technology through Judy and Kelsey. The narrative describes Judy as feeling physically ill when one night her father talks about 'knowing right from wrong' (87). Judy leaves the table as the conversation makes her uncomfortable. Kelsey too concedes to feeling 'a little guilty at what they did', but she doesn't consider that what they did was so bad as 'there are degrees of wrongness' (88). Brenton reveals the secret of his homework machine to the police hotline and he is also the one who reveals it to the school paper because he feels it may not have been

morally wrong for him to use the homework machine for his homework, but was so for Snik and Kelsey because, 'they were using it as a crutch' (120).

My Homework Machine is out of control: Machine Autonomy

These children allude to what Ferre says about the extent to which technology increases human power and the corresponding questions one needs to ask about whether technology or the use to which it is put is ethical or not. Once their secret is out, they decide to delete all the data from the machine but they realise that the machine wasn't letting them delete anything. Judy gets into a fit of panic and unplugs the machine, but nothing happens which further pushes her into paranoia. Judy's panic stems from the fact that, because they couldn't stop it, 'the machine was using us instead of us using it' (127). Brenton, on his part, was frustrated that he couldn't turn his machine off, but at the same time he was awed by the power of artificial intelligence. He was proud that his machine had 'evolved' without any help from him. He proposes that the machine had discovered a way to conserve its energy and had discovered an alternative energy source from an obscure website. For discussing any further course of action Brenton suggests they go to another room for he thinks the machine might be listening to them. This episode where the kids realise that their machine has 'evolved' upto a stage where 'there was no telling what it might decide to do' (127) hints at Bridotti's claim that as technology has made its machines to become smarter and autonomous so as to by-pass human decision making, it is inevitable that they would make life or death decisions and gain greater agency (2011: 44). In such a scenario the human subject is not the deciding agent (45). Sam describes the scenario as straight out of a science fiction movie where the scientist's machinic creation becomes too powerful and develops a mind of its own. It is useful here to refer to recent issue of the weekly magazine *The Economist* on "Morals and the Machine" that speaks of the degree of autonomy machines have attained and argues that: '...the notion of computer controlled machines facing ethical decisions is moving out of the realm of science fiction and into the real world' (2012: 11). As the kids realise that the machine was no more in their control they decide to catapult the machinery into the Grand Canyon.

My Homework Machine is Intelligent: How Machines came to Think?

The sequel *The Return of the Homework Machine* takes off from where these kids realise that the superchip that powered their homework machine is not destroyed despite being thrown into the Canyon. They figure out that the chip is with Ronnie as he goes from 'Ds to As' just like that (Gutman, 2009: 63).

Ronnie discovers that the superchip is very powerful and that it had artificial intelligence. He is awed that 'the chip wasn't just fast, it would *think* like a person' (63): 'It could *think*. If you told it to do something and it couldn't do, the chip would try something *else*. It was like a human brain doing problem-solving. It could learn. The possibilities were unlimited' (74).

'Having a mind of its own', the superchip is a powerful piece of AI that can be understood as a culmination of the long evolutionary history of the thinking machine whose antecedents can be traced back to concept of Cartesian Dualism, i.e the separation of the mind and body. Descartes in his *Discourse on Method* (1880) argued that humans were the only creatures capable of rational thought: *cogito ergo sum*. For him, animals and automata were alike for their lack of reason and were therefore ontologically the same. As Gunkel explains, 'Beginning with Descartes, then, the animal and machine share a common form of alterity that situates them as completely different from and distinctively other than human' (2012:3). He conceptualized the human as a 'thinking being' and set apart the mind and the body as opposite and contrasting entities and pronounced the idea of a 'thinking thing', a physical object capable of mental processes as an impossibility. Descartes did not think a 'thinking' machine was possible because 'thought' being a uniquely human function of the 'rational soul' could not be possessed by machines in their mechanistic bodies (1880: 37-42). He conceived the body as an extension of the mind, 'an extended thing' that can exhibit multiple properties and thus exist in the form of a machine. Descartes, in his philosophical construct conceptualised the body and mind as 'substantially separate entities' (Lausa, 2009: 229). As Descartes stressed that machines were incapable of thinking, he set in place the idea of 'function' in human as well as the machine. The body and the mind performed distinct functions within his scheme of things. The body performed its own set of functions, whereas the human mind performed the function of 'thought'. Dawn E. Lausa,

proposes that Descartes' construct propelled his 'philosophical heirs' such as Charles Babbage, Alan Turing and Norbert Wiener to 'conceive the constellation of concepts that encompass cybernetics, complex systems, and the posthuman' (2009: 8) by reworking Descarte's views on thought and conceptualizing their intelligent devices on the lines of his inconceivable thinking machines. As opposed to Descartes, Babbage buttressed the conceivability of a thinking machine with an ability to use reason as a form of thought and using these ideas he invented one of the first mechanical computers in 1830s. Babbage's calculating engines displayed the use of logical thinking and measuring that became a quintessential attribute of not merely humans, but of machines as well. Reason, a defining characteristic of human intelligence during Enlightenment, now became a defining function of machines. His 'Analytical Engine' in 1843 only further strengthened his claim. Ada Lovelace, an English Mathematician, interpreted the working of Babbage's Analytical Engine in terms of its link to analytical thinking power of the human mind which she demonstrated by writing an algorithm that the engine would follow to compute certain mathematical problems. The term thinking machine now pointed to the connection instead of a separation between thinking and machine. Babbage's engine and Lovelace's interpretation of its capacities, that evinced the organizational relationship between human, machine and the thinking machine was no longer just a material apparatus, it infact paved way for future considerations of the synergy between man and machine through which new avenues and possibilities could be actualized.

Alan Turing, on his part, rejected the boundaries between human and machine and believed that the question 'Can machines think?' is 'too meaningless to deserve discussions' (1950: 442). For Turing too, like Descartes, intelligence meant being able to reason and communicate using language. He conceptualized a new way of dealing with Descarte's concepts of incompatibility of mind and body. He debunked these traditional concepts and questions concerning whether machines could think and instead conceived of new ways to look at the whole idea of 'thinking' and 'machines'. He focussed on how these two were related to one another rather than interpreting the two in terms of ontological difference. He turned such questions into questions of function – how do thinking machines actually 'think'? His 1936 paper "On Computable Numbers, with an Application to the Entscheidungsproblem," in which he first introduces the

Turing machine, also introduces programming as a language that established a connect between human and machine functionality. Turing's paper established and secured the link between human and machine functionality by putting in place programming as a language. He conceptualized the functioning of the machine, its behaviour and system not in terms of its material composition but one to be determined by this high level programming which was basically a communication between set rules and abstract information. Reconfiguring what it meant for machines to think, he conceived that machines could reason and communicate using language of symbols, much like humans.

As in her article "Dreaming Beings and Thinking Things", Ning De-Eknamkul, summarizes Turing's contribution to the relationship between man and machine:

> As symbols became the universal basis of communication, humans and machines shared an equivalent status as speakers of the same language… While men and machine became comparable to each other, a comparative standard in defining 'thinking' and 'intelligence' emerged. Not only do we now judge intelligent machines by how much they think like humans, but we also question our own identity in the light of artificial intelligence. (2016: 57-58)

My Homework Machine thinks like Humans: Machines and Posthuman Possibilities

Within the posthuman way of understanding, the concept of thinking machine entails the breakdown of binaries between human and machine with a focus on both as thinking things. The narrative illustrates this thinking nature of machines and man in instances where the superchip or the homework machine is described as 'having a mind of its own' (Gutman, 2006: 21), or having the ability to 'solve problems like a human brain' (74) or when Brenton first shows the machine to his friends and they feel like there is a 'little man inside the computer who did the work' (Gutman, 2009: 38). Alternatively, the narrative also uses machine metaphors for human intelligence or capabilities, for instance, when Sam describes Brenton to be 'like a human computer' (23), or when their teacher advises them that they didn't have to invent a homework machine because it already exists, 'it's called your brain' (137).Within the posthuman frame of reference, the thinking machine, irrespective of its form and

identity is suggestive of the ability to hold and process information. The emergence of cybernetics, with the publication of the seminal book *Cybernetics* by Norbert Wiener in 1948, the flow of information and its patterns became more important than the materiality of the entity.

The superchip, Ronnie knows has the power to realise the 'fantasies, possibilities, demonstrations and promise' of the thinking machine (Buchanan, 2005: 53). He enumerates these possibilities as thus: 'If somebody wanted to, they could use it to hack into government databases. They could steal social security numbers or credit card numbers. Transfer money without people knowing it. It could bring down the Internet' (Gutman, 2009: 63). These possibilities emphasize the ethical implications of artificial intelligence. Hayles, pointing out human-machine interaction as mutually constructive, writes, 'An essential component of coming to terms with the ethical implications of intelligent machines is recognizing the mutuality of our interactions with them, the complex dynamics through which they create us even or we create them' (1999: 243). Brenton and his group realise the fallout of the chip being with someone like Ronnie and therefore want it back. Ronnie joins hands with a sales guy called Milner and thinks they together could 'control the world' using the super chip. Ronnie and Milner together plan to steal the treasure from the Grand Canyon caves and navigate their way through the caves using the G.P.S which is powered by the superchip. The narrative follows a typical good vs. evil trajectory where Brenton and his friends try to prevent the chip from falling into wrong hands and be misused. Ronnie and Milner, on the other hand represent how technology or artificial intelligence can be misused. From the first book, *The Homework Machine,* wherein the consequences of using the homework machine are limited to questions of personal ethics, the sequel moves to larger ethical concerns regarding the ends to which it is used. As Ronnie and Milner run into Mr. Murphy and Brenton's group at the caves, a scuffle between Murphy and Milner leads to Milner losing his balance and dying after a fall from the cliff. All are shaken after Milner's death and Brenton is awed that 'it's amazing that such a tiny thing could cause so much trouble' (Gutman, 2009: 139).

Brenton and group then once again think of ways to destroy the chip. In a humorous take on the machine coming to life, narrative shows the kids to be wary of certain ways of destroying the machine lest it comes back to life. The idea of the thinking

machine has often manifested itself in science fiction and popular movies as anxiety about robot or machine taking over the humans. Sam hints at an apocalyptic possibility of a *Terminator* like scenario where these 'machines take over the world and decide they're gonna get rid of the human race. Every time the good guys think they will kill one of their cyborg assassins it finds a way to come back to life' (148). Their decision to come up with a fool proof method of getting rid of the chip forever, echoes the apocalyptic response to the 'posthuman possibility'. The children build a rocket to launch the chip into space and narrative keeps the 'posthuman possibility' alive when Brenton hints that the little red light of the chip in outer space might be 'still blinking away' (162).

Conclusion

The analysis of these stories evinces how technology contributes to our identity as modern humans. It also demonstrates how children's literature through the concerns and questions raised in these stories partake in the larger discourses about concerns facing our posthuman future. Several AI scientists and robotics researchers propose that with fast paced technological advancement information based technologies will 'encompass all human based knowledge and proficiency... and emotional and moral intelligence of the human itself' (Kurzweil, 2005: 8) and that eventually 'no human function, physical or mental will lack an artificial counterpart' (Moravec, 1988: 2). Brooks too commenting on the shrinking gap between fiction and reality admits that 'Our fantasy machines have syntax and technology. They also have emotions, desires, fear, love and pride... My thesis is that in just twenty years the boundary between fantasy and reality will be rent asunder' (5).

The intimate relationship between man and machine as reflected in these texts give young readers an opportunity for a wide range of responses. My analysis of these texts suggests that they are neither extremely technophobic nor fully technophilic. They in fact portray what John Naisbitt in his book *High Tech/High Touch* describes as confused and ambivalent relationship with technology:

> Most of us have a relationship with technology that rebounds from one extreme to another. One moment we are afraid of it, one moment we are inspired by its power. One day we begrudgingly accept it for fear of

> falling behind our competitors or co-workers, the next day embracing it enthusiastically as something that will make our lives or business better, then feeling frustrated or annoyed when it fails to deliver. (1999:11)

The child centred focus on the posthuman ethic raised through these texts are symptomatic of the large questions that face us owing to our machines with high degree of autonomy, the emergence of new forms of subjectivity and cyborg ontologies that have emerged due to the unprecedented intrusion of technology in our lives.

References

Barbour, I. (1992) *Ethics in an Age of Technology*. *Gifford Lectures Vol. 2.* New York: Harper One.

Braidotti, R. (2011) *The Posthuman.* Cambridge: Polity Press.

Buchanan, B.G. (2005) "A (Very) Brief History of Artificial Intelligence", *AI Magazine* No. 26, 4:53-60.

Clark, A. (2003) *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence.* Oxford University Press.

De-Eknamkul, N. (2016) "Dreaming Beings and Thinking Things", *Clio's Scroll* No. 18, 1: 19-64.

Descartes, R. (1880) *The Method, Meditations, and Selections from the Principles of Descartes. Tr. from the Original Texts with a New Introductory Essay, Historical and Critical*. (Trans.) John Veitch, 7th ed. Blackwood and Sons.

Dreyfus, H. (2001) *On the Internet*. (ed.) Simon Critchley. Routledge.

Bacon, D. (2012) "Morals and the Machine", *The Economist* (June 12).

Ferre's, F. (1995) *Philosophy of Technology*. University of Georgia Press.

Grenville, B. (2001) *The Uncanny: Experiments in Cyborg Culture*. Arsenal Pulp Press and Vancouver Art Gallery.

Gunkel, D.J. (2012) *The Machine Question Critical Perspectives on AI, Robots, and Ethics*. MIT Press.

Gutman, D. (2006) *The Homework Machine*. Aladdin Paperbacks.

Gutman, D. (2009) *Return of the homework machine*. Simon & Schuster for Young Readers.

Haraway, D. (1985) "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s", *Socialist Review* 15, 2: 65-107.

Hayles, K. (1999) *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*. University of Chicago Press.

Hodges, A. (1983) *The Enigma*. New York: Simon and Schuster.

Kurzweil, R. (2005) *The Singularity Is Near: When Humans Transcend Biology*. Viking.

Lausa, D. E. (2009) "Descartes' Daughters: Thinking-Machines and the Emergence of Posthuman Complexity". *Syracuse University*.

Luigi F. M. (1843) "Translator's Notes to Sketch of the Analytical Engine Invented by Charles Babbage, Esq." (Trans.) Ada Lovelace. *Scientific Memoirs*, 3: 691-731.

Moravec, Hans P. (1988) *Mind Children: The Future of Robot and Human Intelligence*. Harvard University Press.

Naisbitt, John. (1999) *High Technology/High Touch: Technology and Our Accelerated Search for Meaning*. Broadway Books.

Nayar, P. K. (2013) *Posthumanism*. Polity Press.

Turing, A. M. (1950) "Computing Machinery and Intelligence", *Mind,* 59, 236: 433-460.

Turing, A. M. (1937) "On Computable Numbers, with an Application to the Entscheidungsproblem", *Proceedings of the London Mathematical Society*, 42, 2: 230-265.