

# A Neo-Luddite Manifesto: or Why I Do Not Love Robots

**Nicholas Hunt-Bull**

Southern New Hampshire University  
2500 North River Road,  
Manchester, New Hampshire, 03106  
n.hunt-bull@snhu.edu

## Abstract

I argue in this essay that we should be leery of embracing ubiquitous use of robots in society. Once the technology is deployed it will be too late to go back. I identify a view which I call “robot panglossianism”—the view that robots are a complete, or almost complete, social good. I think that this view, at least in its extreme form, is dangerously naïve. Having suggested that building human-like robots is “playing God” I suggest two arguments for significant concern about the introduction of ubiquitous robots: 1) that practical problems might make such robots impossible outside of the movie theatre, and 2) that the likely economic and social disorder caused by this new disruptive technology is so great that this may be a change that we want to stop before we get to a point where we cannot go back.

## Robots and Luddites

Although medical ethics only became a serious discipline after the Second World War, one of the most profound observations about the role of medicine was made twenty-four-hundred years earlier by Socrates in the *Republic*. Long before invitro fertilization or chemotherapy, Socrates recognized what the real challenge of medicine is. It is not curing patients, but rather to know which patients will benefit from treatment, which will get better on their own, and when a patient would be better off being left alone to die. Too often doctors intervene when they should just leave their patients in peace.

We see a similar over-eagerness to interfere, I believe, in the long anticipated introduction of ubiquitous robots into our society. This is something that many journalists predict, many geeks anticipate, and many scientist and technicians labor towards. To paraphrase Mary Shelly, their imaginations are too much exalted by their first success to permit them to doubt of their ability to give life to a robot as complex and wonderful as man.

Yet, I believe, far too many of those scientists, like the middlesome doctors that Socrates criticized, ignore the moral dimensions of their work. We all remember that Wernher Von Braun (to pick on an easy target) just made the rockets for Hitler; he did not fire them at London. Yet with medical advances or new weapons, if someone makes them, then almost certainly someone will use them. There seems to be an inevitability that if a technology exists it will always be used. And with invention goes responsibility. We used the atomic bomb (twice), and so too every medical technology so far developed. We already use cloning technologies extensively in agribusiness. No doubt when cloning produces something useful to human medicine that too will be exploited immediately.

What has this to do with robots? We already use them, but so far for remarkably narrowly defined tasks. Robots build and paint cars, and perform other tedious welding and soldering tasks quite efficiently. Just recently they have become popular as self-directing vacuum-cleaners and floor sweepers. The U.S. military is trying to develop robot trucks to deliver supplies, and staged a recent robot car race across the Mojave Desert with a two million dollar prize (Orenstein 2005). Yet almost all robots continue to lack any serious element of artificial intelligence, the science which stays fiction for decade after decade. Now the second generation of writers who created tales of “robots” have aged and died and we still have no real androids out to get us (or love us to death)—in the movies they still have to be played by Rutger Hauer, Arnold Schwarzenegger or Haley Joel Osment. Nonetheless, we should prepare ourselves just in case the project of creating robots driven by artificial intelligence ever works. Since most of those attending this conference either believe they already have built artificial intelligence, are currently trying hard to build AI, or at least think it is a really good idea, this is probably worth doing.

As my title suggests, this essay is a plea to step back from excessive dependence on technology. It is a plea to leave most of the shiny robots in their boxes. While I do not encourage anyone to smash weaving machines like the Luddites of earlier centuries, I do encourage them to think twice (or three or four times) before deciding to use all the

technology that we could use. When the tools become the master, it is time to turn your cell phone off and get a life. When the cell phone is smarter than you, then it will already be way too late.

Let me add a second note. I am not, at least in this paper, a critic of technology or even of artificial intelligence in general. We live, at least in the developed world, in an environment of comprehensive computing, and I cannot imagine that most of us would be happy to give that up. This is a session on human-robot interaction, and I am only challenging myself with beating on robots for today. Having artificial intelligence systems which recommend alternative spelling for Google searches or help the US Mail deliver packages more efficiently is fine with me. Thus software, or even highly sophisticated industrial machines confined in place in a factory are not of concern. What do worry me are artificial agents that have the ability to move and make autonomous decisions based on feedback from their environment (Russell and Norvig 1995). In other words, the things that regular people call “robots.”

“Neo-Luddism” is a (admittedly problematic) name for this position. It harks back to the romantic, if futile, campaign of Lancashire weavers to preserve their jobs and families by resisting their enslavement in dark satanic mills. They lost. With the help of the Reform Bills, the Labour Party and welfare capitalism, their great-great-great-grandchildren had a much nicer lifestyle than the weavers had had crushed out of them. The mill owners no doubt bought a seat in the House of Lords many generations back. Such is the way with technology. It tends not to distribute its rewards very fairly. Given the history of the Luddites, those who embrace modern technologically simple living—using only the technology that actually benefits us—can be called Neo-Luddites. We are probably going to lose too.

## A Robot Timeline

To frame the discussion, let’s consider some dates in the development of our thinking about robots:

- As many of you know, the word “robot” entered the English language in about 1923 from Czech. Interestingly, the play R.U.R. (“Rossum’s Universal Robots”) (1920) which invented the name for them had robots that were bioengineered, not mechanical (Jerz 2002).<sup>1</sup> Nonetheless, we almost exclusively use the term

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<sup>1</sup> A Penguin Classics translation is available for those wishing to read it in English. It was first performed in Czech in 1921, and in English in 1922. The first Oxford English Dictionary definition of “robot” reflects the influence of the play: “One of the mechanical men and women in Čapek’s play; hence, a machine (sometimes resembling a human being in appearance) designed to function in place of a living agent, esp. one which carries out a variety of tasks automatically or with a minimum of external impulse.”

for mechanical devices, and movie versions of Karel Čapek’s story have transformed them into metal machines.

- The idea of robots, in the sense of self-controlled humanoid mechanical devices, predated our modern name for them by centuries. One example was the chess-playing mechanical “Turk” of late 18th Century Europe. A popular touring attraction, his name came from the Turkish costume worn by the seated automaton. The Turk conveniently had a talented chess playing man hidden inside, deciding what moves to make and operating the Turk’s mechanical hand (Wood 2002).
- The greatest literary work on the perils of making an artificial man came from the fertile imagination of Mary Shelly. Shelly’s *Frankenstein* of 1817, describes a creature of hideous appearance but of an astonishingly rich mental and spiritual life. The so-called monster teaches itself to speak and to read, and then reads with profit Plutarch’s *Lives*, Milton’s *Paradise Lost*, and Goethe’s *Sorrows of Young Werther*. Given that he is more sophisticated than most modern undergraduates it is impossible to agree with Herr Frankenstein that the monster is not a person.
- The really useful industrial robot finally arrived in the early 1960s, forty years after Čapek had predicted that robots would destroy humanity, but shortly before the Jetsons first appeared on television to show us that 1950s family life would continue far into the future with robot butlers.
- Another forty years later most American homes still do not have a single (non-toy) robot, although a few have arrived in the form of the cute Roomba vacuum-cleaning cockroach.
- Artificial Intelligence, the topic of this conference—which would be necessary to replace the man in the back of the chess robot—is now 50 years old. We will certainly need AI to make really capable robots. Even with massive processing power, and many impressive sub-systems, we are not there yet. To be fair, computer chess has been mastered, so we could build a real Turk if anyone wanted to.
- Finally, there is robot panglossianism. This is the view that robots are a complete, or almost complete, social good. We should open our hearts and learn to love the robot. As my use of Dr. Pangloss’s name suggests, I think that this view, at least in its extreme form, is dangerously naïve.<sup>2</sup> I suggest we can date this fairly specifically to the publication of Isaac Asimov’s first robot story, “Robbie,” in 1940.<sup>3</sup>

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<sup>2</sup> Pangloss, of course, is a character in a novel by Voltaire, modeled on Leibniz, who is precisely guilty of believing the best of everything since we live in “the best of all possible worlds.”

<sup>3</sup> The original title was “Strange Bedfellows,” in *Super Science Stories* magazine. It is been reprinted numerous times.

## Robot Panglossianism

Asimov argues that our dread of robots, which he calls the “Frankenstein complex,” reflects a fear that robot-building is an act of blasphemy. Since robots look like humans, and humans are supposed to have been created by God, to make a humanoid robot is to usurp God’s proper role.

One way of expressing this feeling is to say that only God can create a soul. A human inventor may devise an artificial being that seems to possess life in all its aspects, but that being can never have...the God-given spark that will lend it potentiality for goodness and virtue. Even if the robot is not actively evil and malevolent, it cannot help becoming so because it is passively incapable of anything else (Asimov, Introduction).

Asimov’s conceptual borrowing from *Frankenstein* is only partly right. In that novel the monster twice describes himself as “Adam,” explicitly placing the creator Frankenstein in the place of God. He even invites Frankenstein to judge—and perhaps absolve—his sins. Clearly if we were to make robots with personhood, robots like the monster Shelly actually describes in her novel, then we *would* be playing god. This isn’t a sort of blasphemy. It is blasphemy. Steven Spielberg is quite explicit about this in the script for his recent film “A.I. Artificial Intelligence,” having his robot designer embrace his god-like role. Yet Professor Hobby, played by William Hurt, is a petty and selfish god. He rejects the suggestion that he has any moral responsibility to the emotion-feeling robot his company is building, saying “in the beginning, didn’t God create Adam to love him?” (Spielberg 2001) Unlike Professor Hobby’s intentions, Frankenstein’s monster is not really bad. He is, rather ugly and unloved. He responds as any sensitive creature would to the abuse that Frankenstein subjects him to through carelessness and selfishness. He lashes out in a vengeful rage against his creator, but the fault is his creator’s, not his. Some believe the same is true of humanity’s relationship to God, but perhaps that is a topic for another time.

Stop for a moment and ponder a situation where there are many beings—many persons—like the “monster,” with great strength and intelligence and especially sensitivity around. What would we reasonably expect to happen? What would these beings deserve from their creators, and would their creators not want to be very, very careful about creating them? Can Frankenstein’s moaning that he wished he had not sought knowledge so diligently not teach us something?

Back to Asimov. As a virulent critic of the robot-building-as-playing-god view, which he dismisses as “technophobia,” Asimov sought to rehabilitate the literary robot. His “three laws of robotics” have had a huge influence on public attitudes to robots. Robots can’t hurt us if they follow those laws! This leads me to a more general point. It is, I think, highly instructive that almost everything one can say about human-robot interaction is

still stuck in fiction, since the robots we actually have are still pretty lame. Compared to the jet-cars and self-cleaning houses of 1950s fantasy, 2006 robots are a massive disappointment to anyone who looks honestly at the expectations of technology gurus 25 or even 10 years ago. Real robots may look cool on “Nova,” but can they do the dishes? Not in my lifetime.

Panglossianism, or less charitably, moral cluelessness, is not restricted to novelists of course. Carnegie-Mellon University robotics researcher Hans Moravec has endorsed the complete replacement of human beings by our technological offspring, saying that, “In the future, I think human beings will be robots. Basically, I [have] reconciled [myself] to the coming transcendence of machines over the current status of human beings as a form of reproduction.”<sup>4</sup> He has even, perhaps playfully, implied that he might want to have robot children. Moravec may have been exaggerating for effect of course. Hugo de Garis of Utah State University describes a near future with robots of “godlike” [here She is again!] mental powers that could, if they choose, take over the world and squish us like bugs. These “artilects,” and the debate he thinks we will have over whether to build them or not, are he says the key political issue of the future (de Garis 2001).

## Why I am a Neo-Luddite

Obviously I have genuine opponents who (perhaps fanatically) support the massive integration of robots into society as soon as possible. Some even *seem* to think us expendable. Neo-Luddism does not target a straw robot lover. Why do I think that my opponents are mistaken? I will merely suggest the reasons, which are two: one practical and one moral. First the practical one— robots with human-like abilities are a delusion. Or so I certainly hope! However much we increase the processing power of robot brains, they will continue not to achieve real intelligence. If the philosophers of mind cannot figure out what human consciousness is, why imagine that more and more processing power will ever allow us to make the leap to artificial consciousness? This is, of course, an enormously complex question, but this comment from one text on AI puts it well: “The problem seems to be that consciousness, as we currently (fail to) understand it, is not understandable by the normal means available to science.” (Russell and Norvig 1995)<sup>5</sup> And without consciousness, or a remarkably convincing simulacrum of it, we do not have any real intelligence or robot-human interaction that

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<sup>4</sup> I have transcribed the first part of his recorded response to the question, “If in the future machines have the ability to reason, are self-aware and have feelings, then what makes a human being a human being, and a robot a robot?” on the website of the Tech Museum of Innovation, <http://www.thetech.org/robotics/ethics/question1.html>.

<sup>5</sup> As functionalists, who apparently assume that consciousness is an unproblematic “emergent property,” Russell and Norvig do not share my skepticism.

disturbs me much. Memory is critical too—and I do not mean more data chips or even face recognition, but memory in the sense of remembering what it was like to smell Mum’s burnt meatloaf.<sup>6</sup> Edgar Allen Poe intuited something rather to this effect in an exposé of the chess-playing Turk, which had begun touring the United States starting in 1826.<sup>7</sup> Poe contrasted the Turk to Charles Babbage’s calculating machine. Babbage’s machine showed all its parts to the public, and given its sequential “algebraical calculations” was a plausible product of the mechanical arts (Poe 1836). The Turk, in contrast, had to be a fake, not just because it hid its parts, but because it performed a set of functions too intuitive and too complex for it to be plausible (at least at that time) that any machine could do them. In other words, the Turk failed the Turing Test. Rather, the Turk passed the Turing Test when it should have failed, and so failed to “pass” as a robot. It was insufficiently robotic. British journalist Gaby Wood, whose book *Edison’s Eve* directed me to Poe’s article, recounts meeting with Gary Kasparov, the human chess champion who famously lost a dramatic chess showdown to the computer Deep Blue. Kasparov apparently remains convinced that the computer must have cheated—by getting help from a human being—to have been able to beat him (Wood 2002)!

A final barrier to really useful robots is their lack of affect or emotions. This issue has been discussed in some detail by another robot panglossian, the design guru Donald A. Norman. Not appreciating, I believe, the power of his own analysis, Norman’s case is summarized in this passage from his 2004 book *Emotional Design*.

How will my toaster ever get better, making toast the way that I prefer, unless it has some pride? Machines will not be smart and sensible until they have both intelligence and emotions. Emotions enable us to translate intelligence into action.

My second reason for Neo-Luddism, or at least deep skepticism about human-robot interaction, is moral, or at least I will call it “moral.” Repeatedly in human history technological changes have been embraced, willingly or unwillingly, and each time there has been no going back. We cannot reverse the agricultural revolution, the industrial revolution, the introduction of the internet, or the discovery of the atomic and hydrogen bombs. While such changes in technology increase our choices in certain

<sup>6</sup> The importance of this is that what makes a person this person rather than that person, which philosopher call “personal identity,” is determined by her particular store of memories. Robots necessarily lack memories in this sense, although Rachel, the single perfected replicant of Blade Runner (Ridley Scott, 1982) would be one exception to this. She embodies Bertrand Russell’s question “how do you know the universe was not created five minutes ago.” To which the answer is, of course, that one doesn’t. See Russell’s *The Problems of Philosophy*. New York: Oxford University Press, 1964.

<sup>7</sup> I owe the example, and much of my interpretation, to Gaby Wood, 76-80.

ways—by increasing our food supply, or speeding communications, they also reduce our choices in other ways and destroy certain options that we used to have. Socrates said that education is the only product that you cannot try out before you get it, and give it back if you do not like it, since by the time you know whether it is good or bad it has already changed your soul. Socrates, of course, was an innocent who lived in a time of radically slower change. New disruptive technologies emerge regularly, and have disrupted our lives before their likely effects have even been considered. By the time they have changed us, it is too late to sell them back to the manufacturers. Change may be good, but change that is keep on a human scale, and thought about carefully, only done for the good of the many and not the profit of the few is far preferable. If any of you think we are going to get robots integrated into our society that way—on a human scale, at a reasonable pace, and for the good of the many, and not the profit of the few—then perhaps we have no need for Luddites old or new. But then again, I think we all know the real world better than that.

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