

Editorial

Humans and Robots

In this discussion I will talk about the potential human/robotic symbiotic future and the barriers to that being possible. I will argue that there is a need for agreement about the laws of robotics controlling the treatment of humans by robots and Artificial Intelligence (AI) in general as well as agreement concerning the human treatment of robots and of the use of Artificial Intelligence generally

Since the advent of the stored-program electronic computer humans have been creating robotic assistants to help them accomplish daily tasks. The most famous initial example of this was the work at Bletchley Park in the England during the Second World War. There, largely under the direction of the English mathematician and logician Alan Turing, an electronic computer was first constructed to help the Allies facing the Axis powers in that war to combat the submarine warfare run by the Nazis against the United Kingdom, its empire and a little later the United States, by daily cracking the secret “Enigma” Code that the Germans were using to communicate with their vast array of submarines that were attacking Allied ships full of supplies and soldiers. This was a very successful first use of artificial intelligence to help win a war.

In 1950 Alan Turing wrote about this work and its future possibilities for humankind in an article that he published in the British philosophy journal *Mind*. He entitled his paper “Computing Machinery and Intelligence”. In that paper he pointed out that it was not easy to find a definition of intelligence or thinking that could be applied directly to the robotic devices that could be programmed into an electronic computer with sufficient speed and memory. Instead he replaced the question of whether a robot or computer program could think by what he called “the imitation game” in which an observer was in communication with a human being and a suitably programmed computer by telegraphic means and could ask each whatever questions it wanted and who did not know which was the computer and which the programmed computer. When the human observer could not tell better than 50 % correctly, which was the man, which the computer, the computer was said to have succeeded in the imitation game. That is probably still the best test available from our point of view.

Turing himself thought that by the year 2000 or so a candidate that might be successful in the Imitation Game would be programmable, could be coded into a modern computer. When I was a young medical student in Canada I worked in the summer in the 1960s for a professor who was interested, as I was, in automated medical diagnosis and I registered in a second degree, an MSc in computing science while attempting to automate the diagnosis of a limited range of heart diseases. At that time there was a computer program that could be contacted from a peripheral device called "Doctor" that a patient could communicate with that already appeared to have succeeded in the Turing Imitation Game. Patients often said that it was the best doctor they had ever communicated with.

Since that time Artificial Intelligence has penetrated a great deal of the everyday life of anybody who uses a large mainframe, modern desktop, laptop computer or even cell phones and automobiles. As I type this discussion a spell check robot is working to see that I don't make too many mistakes of spelling or grammar. Many countries, especially Japan, the United States and China, have been interested in constructing robots for accomplishing everyday tasks: serving at restaurants, cleaning the floors of one's home, or engaging in military tasks of a variety of kinds. The present wars in the Ukraine and Gaza are perhaps the first wars to employ a great deal of artificial intelligence and robotics to help both attack and defend on both sides.

It is clear that that it is at present our militaries that are most interested in the development of robots and of highly competent artificial intelligence. But it is the possible symbiotic relationships between our robots and AI generally and ourselves that is the most promising development for the future for us all. One can imagine a possible future in which our households have robots that surround us and help us in all our daily tasks. Some of these can be embodied and others not.

One of the recent very controversial AI/ robotic products commercially available is the development of Chat GPT, an AI program that, given a few directions, can create poetry, prose, scientific analysis, an essay for an examination or critique a paper that one has just written for logic, coherence, solidity and good references. Chat GPT has been used to write scientific articles that have been sent to journals like the two I edit as if they had been written by a human author.

In my role as Editor in Chief of two international journals I have recently been informed by the owners of one of the journals that they now have AI robots that look at every article that is forwarded through an robotic Editorial Manager to me and test it for possible construction by devices like Chat GPT and not by humans. Recently such an article was withdrawn from my journal prior to its being sent out to human reviewers. Perhaps in the future the necessity for humans reviewers will be diminished by such competitive AI robotic article checkers and robotic referees.

Ideally one would like a possible symbiotic relationship in which the robot and the human in the midst of necessary tasks each have a role and support one another. One would like to give credit to both a human and a robotic author of an original paper that is judged by its creativity and solidity as worthy of publishing. At the present time we do not mention the Spell Check robot that lurks behind most of what we as authors in many languages do. And of course, at the moment we can cut it out or shut it down if we do not like how it is helping us.

Another example of the use of a symbiotic relationship between a human and a robot that could be an everyday relationship is in relation to the daily driving task that many of us face in getting to and from work. Though of course COVID-19 has affected this in a striking way, cutting back on human appearances at central offices all over the world. But when we do have to get to work, many of us had to drive. We would like our car to be a helpful robot that negotiated difficult traffic situations, anticipated future difficulties, kept us in the right lane and signaled or moved us to the next one an so on, guiding us and somethings helping us to get there. In such a relationship it is clear what is to the advantage of the human. But what of the robot?

At some point our robots will each be capable of doing the myriad of tasks that a human does, with few exceptions. It may even be the case that for some of the embodied ones we will want to think of them as “persons” with legal status comparable to that of ourselves. At the moment we are not ready to grant “citizenship” to any of our robots. But that is certainly a future possibility. And someday soon they may be marching (or doing the AI equivalent) in our streets asking for citizenship and equal rights to ourselves. Payment for robots, homes for robots, pensions for robots, robots wishing romantic lifelong relationships, schooling for robots, and the analogue of health care for robots.

Before this happens it is now time for us to think about the problems we humans will face if some or all of our robots were to become legal persons. It seems to me that there are two things we have to sort out rather soon. The first is what the basic laws must be for robots in relation to their treatment of we humans. And the second is what the basic laws must be for humans in relation to their treatment of robots. This latter topic has never yet been considered so far as I know.

The person who first thought about the possibility of robots as effectively legal persons who interacted symbiotically with humans was Isaac Asimov, a university chemistry professor and a writer of science fiction. He developed the first serious suggestion about what ought to be the fundamental laws controlling robots and robotics in relation to human beings. You will remember that his three laws of robotics were:

1. A robot may not injure a human being or through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

This would certainly be a good beginning and would be reasonable laws for the United Nations and each individual country to pass into law that would control the creation, development and manufacture of robots and other robotic like artificial intelligence entities.

But if robots and other artificially intelligence entities were to become legal persons, then would there not have to be at least three parallel laws for humans in their treatment of robots and AI entities that had that status?

Would these not have to be parallel to the three laws above, namely something like:

1. A human being may not injure a robotic or artificially intelligent person or through inaction allow a robotic or artificially intelligent person to come to harm.

2. A human being must consult with a robotic or artificially intelligent person in order that joint decisions are made that do not conflict with the first Law.
3. A human being must protect its own existence as long as such protection is a joint decision after consultation with a robotic or artificially intelligent person that agrees to sacrifice its own personal status in order to protect its human symbiont.

It seems to me that the greatest barrier to real human/robotic & AI symbiosis is the difficulty of getting international and national legislation passing such laws to protect both humans and robots.

I hope that a discussion of such laws might occur at a conference like this.

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Reference

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