

# CHALLENGES OF TODAY'S SOCIETY

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## THE PROBLEM OF ROBOTICS AND ARTIFICIAL INTELLIGENCE IN THE WORK OF A. AZIMOV

The American science fiction writer Isaac Asimov was initially born in the USSR in 1920 and later moved to the United States with his family. In 1928, the family gained the citizenship of the US and opened a store, where fresh newspapers and magazines of political, economic, and scientific content, which were gaining in popularity at the time, could be purchased. Thus, Isaac Asimov joined the scientific discourse at a young age and later fully immersed himself in it after entering Columbia University.

It is reflected in his works, the collection "I, Robot" in particular, which was published in 1950. The fantastic realm created by the novelist exists owing to human brain and science. Such a world provides a striking opposition to the first superhero comic books which were released in 1938 and went down a storm. Thus, Isaac Asimov created an outstanding realm where the only superpower is the human mind. In the structure of the images of the characters, the author puts the leading idea of the French philosopher Descartes: "*I, myself, exist, because I think*".

In the collection Isaac Asimov formulates three postulates, on which, in his opinion, the consciousness of machines is based. They are the key to a reasonable balance between man and robot:

"One, a robot may not injure a human being, or, through inaction, allow a human being to come to harm. Two, [...] a robot must obey the orders given it by human beings except where such orders would conflict with the First Law. And three, a robot must protect its own existence as long as such protection does not conflict with the First or Second Laws."

The author shifts his focus to the robot as the core of the realm presented in the stories from the collection "I, Robot." The protagonists of the story continuously underline the intellectual and emotional capacity of robots, fights for their equal coexistence with people, acceptance in the society. In his stories robots completely understand the aim and purpose of their creation and being, and experience emotions accordingly to their "calling." The fact that they have their own system of values and principles, though, artificially made, peculiarities of structure and so on allows us to conclude that robot is basically a new gender.

In the collection a robot psychologist Dr. Susan Calvin is responsible for figuring out motivation of robots, its interpretation in accordance to the *Three Laws of Robotics*. Analyzing them, she repeatedly emphasizes their perfection and mentions that

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“there was a time when humanity faced the universe alone and without a friend. Now he has creatures to help him; stronger creatures than himself, more faithful, more useful, and absolutely devoted to him. Mankind is no longer alone.”

The story “Robbie”, which opens the collection, raises issues of the place of robot in society and xenophobia. Robbie is the first nurse of his kind who takes care of little Gloria. According to the girl’s father, the robot is “*cleverer than half my [his] office staff,*” but the neighbors bypass Weston’s yard with the unmasked suspicion, the children do not play with Gloria on the playgrounds since the girl is accompanied by a “*demon creation*”, which “*has no soul*”. When, under social pressure, the parents decide to send the robot back to the manufacturer, Gloria desperately strives to persuade the parents that “*he was a person just like you and me and he was my friend.*”

Something similar happened to the protagonist of the story “Runaround”, a robot blacksmith Speedy that falls into a psychological trap, trying to carry out people’s orders to get selenium in the mines for the station and save his life (around the mine there is a high radiation concentration which is capable of disabling the robot), as the 2nd and 3rd laws proclaim. Therefore, he circles around the mine, not daring neither to return to the station without selenium, nor to waste his life, since a lot of investment was spent on the construction of this model.

Similar psychological paradoxes occur when in the story “Reason” robots develop a religious doctrine that denies a man as a higher intelligent creature, while maintaining the idea of serving a man. “*There is no Master but the Master; he said, and QT-1 is his prophet.*” Thus, transforming the commandment of Islam, all the robots reject the idea that they were created by a human being. They are capable of tackling tech concerns or taking full control of all spheres of human existence, the people themselves, surprisingly, accept this religion, because as long as the robot is able to fulfil its functions, “*what’s the difference what he believes!*” So, the question is: Are we still behind the wheel of our lives?!

The concept of accepting robots as equal participants of life events is apparently popular and is reflected in plenty books and films nowadays. It poses the question: is it necessary to accept, tolerate and give equal rights to somebody (or something) that takes a huge responsibility for daily challenges, works, helps and is intelligent?

Human culture is extremely complex, and when robots become part of it, it is important to ensure their competent integration. The need to study roboethics in the modern world is caused primarily by an increase in the number of situations when artificial intelligence makes decisions that can harm a person. The main task of roboethics is to make interaction with robots safe and effective for humans.

There is also a problematic question of what methods can be used to put ideas about right and wrong, permissible and unlawful into robots. In addition, it is important to determine who will be responsible for the failure in the algorithms: the owner of the robot or the developer. To resolve these issues, it is necessary, first of all, to create legal norms to regulate this area of responsibility.

One of the first publications directly addressing and setting the foundation for robot ethics was “Runaround,” a science fiction short story written by Isaac Asimov in 1942 which featured his well known Three Laws of Robotics. The short term “roboethics” was most likely

coined by Gianmarco Veruggio.

An important event was the First International Symposium on Roboethics in 2004 by the collaborative effort of Scuola di Robotica, the Arts Lab of Scuola Superiore Sant'Anna, Pisa, and the Theological Institute of Pontificia Accademia della Santa Croce, Rome. During the discussion, questions were raised about whether intelligent robots possess consciousness, whether they experience feelings and whether they pose a danger to humanity.

Companies around the world are implementing robots. According to the International Federation of Robotics (IFR), the global average number of industrial robots per 10,000 industrial workers has grown from 66 robots in 2015 to what we have now. Korea has become the country with the highest adoption rate of industrial robots, with 932 robots per 10,000 workers in 2020, while Singapore came in second and Japan is the 3rd.

But in Ukraine, robotization and complex automated processes are not yet a trend. Companies are still using this technique very carefully. There are robotic complexes at large factories. If we talk about the industries that are leading in robotization, then in Ukraine one can mention metallurgy and food processing, as well as logistics and agriculture.

In the consumer sector today, there is a steady demand for a variety of cleaning robots and drones. The fastest growing direction of robotics in Ukraine is educational. Classes are held in schools in which they learn to design and program robots using special kits of robotics. We hope that the guys who are now studying in robotics educational institutions will glorify Ukraine as a strong player in the global robotics market.

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