



УДК 007.52

PARADOXES OF ROBOTICS

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The aim of the paper is to explore the causes of the paradoxes of autonomy security by in-depth study of the basic principles of the creation of robotics, which possesses artificial intelligence and understands the basic logical principles. **The tasks** are investigate the emergence of paradoxes in the process of creating artificial intelligence and find a relationship between the termination of technology development and the emergence of paradoxes.

The study object is the process of creation of safe artificial intelligence, namely the emergence of disputes in these processes that are mutually exclusive. The subject of the study is self-aware robotics.

The methods of observation, experiment, processing and analysis of lagging data, generalization and description are used in this work.

The scientific novelty of the presented work is that author tried to made a connection between the individual spheres of the creation of a robotics and explored the mistakes that coincide with the development of artificial intelligence and offered his vision of the solution to this problem.

Results and discussion. The group that is engaged in the creation of a robot should program it in accordance with the three laws of robotics, which was first formed by Isaac Asimov [1.,p. 782].

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 Laws.

Seemingly, these rules are able to ensure the correct interaction of the Man-Robot shadows and Hollywood movies will never become true, but there are situations, when they are powerless and can even cause an error in the operating system of the robot.

Suppose the limiting cases. The man gives the job a choice - "kill me, otherwise I will do it myself!". Here, the system may fail, as according to the first law, the robot can't harm a person, but in this case, his lack of will lead to the death of a person, which also contradicts the first law.

In this case, the robot or "will give an error", or will not listen to the person and more, will take away the weapon from her. It will be a robot that can logically think not only according to the given program and means that it has self-awareness.

Until recently, such work was something impossible, but the experiment of American scientists with artificial intelligence of the three robots had a stunning result! Three old models of robots Nao reported that two of them had a special tablet of "silence" because of which they deprived their ability to speak (in fact, the broadcast was disconnected software). The task was to find someone who did not get this "pill." All three of them will try to answer "I don't know", but since only one of them can actually really speak, it is the one that stands up and audibly says it. But then, a few seconds later, it realizes this and concludes that it didn't receive the dumbing pill and added "Sorry, now I know. I concluded that I did not get a pill" [5, p. 1].



All this shows that robot was able to identify his voice and moreover, he himself realized that the opportunity to speak indicated that he had not received this pill. This experiment leads us to the fact that robots are capable of thinking independently on a primitive level and, most importantly, to draw conclusions.

In order to work as intended, robots should be independent subjects that control themselves and are capable of self-learning based on the results of their training in practice. This poses a great challenge to robotics, which we are calling the “autonomy-safety-paradox” (ASP) [4, p. 51]. This represents another significant problem of robotics: introduction of robotic assistants in everyday life. The introduction of robotic assistants in everyday life requires a well-coordinated work of two dissonant factors: increasing the autonomy of machines and ensuring their safe use.

As the level of robot autonomy grows, the risk of accidents will increase and it will be more difficult to find the reason for such a breakdown. Also, need to be considered that the development of robots largely depends not only on the team that working on the development of intelligence and laying the foundation for its self-development, but also from the first testers of intelligence of robot, because his teaching system is something like a child, when the first experience is the most important in the future life.

Conclusion. Having examined the main causes of errors, I think, that solving all these paradoxes is to ensure the security of autonomy and the invention of a new algorithm. This will minimize the subjective influence of an individual on him, which will ensure the creation of safe artificial intelligence with a sufficient moral level and high computational ability.

Keywords: *paradoxes of robotics, artificial intelligence, autonomy-safety-paradox.*

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