

A. Krausová: Legal Regulation of Artificial Beings

LEGAL REGULATION OF ARTIFICIAL BEINGS

by

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In the connection with a development of informatics there appears a new phenomenon in the society – artificial beings. These beings are gradually beginning to interfere in an everyday human life. They appear in various areas of living. People may communicate with them even without recognizing that they are in a contact with something artificially created. The question is how the law deals with this event.

Traditionally there are two points of view – a view de lege lata and a view de lege ferenda. Artificial beings de lege lata can be subordinated above all under the legal definition of a computer program, but also under the definition of a database and even an artwork. A situation with the view de lege ferenda is much more complicated.

A discussion about subjectifying of artificial beings arose. The reason why some people would award artificial beings rights and duties is a fact that these entities are no more passive mediators but active autonomous systems with an ability to learn from their own experience and to take control of themselves.

There also emerged particular legal problems related to autonomous intelligent agents and multi-agents systems. Dubiousness is especially in matters of legal relations and liability.

The answer to if and eventually how and when the law regulating artificial beings should change can be constructed on the basis of comparison of reasons for identity declaration.

Artificial Beings in the Present World [1]

When we ask someone, if he or she has ever met some artificial being, majority of people will not know the right answer. Everyone has for sure read something about them – sci-fi stories or information about their development in the press – but meet them? Most people would at first ask

how do artificial beings look like, where do they exist and how could they meet them. Next question would point at abilities of these artificial beings and possibilities how to utilize them.

Only a small rate of population knows how much artificial beings can influence real life. Some of them save our money, some of them decide for us and some of them communicate with us without we know that we deal with an artificial being.

Artificial intelligence, which constitute basis of artificial beings, is at the present time used in a wide spectrum of scientific disciplines. Its practical use really makes our lives easier. Artificial intelligence is usually used in the sphere of classification (e.g. differentiation of artificial and nature objects on the sea bottom), prediction (e.g. market demand prediction, stock market progress prediction), directing (e.g. automatic navigational systems) or data compression.

As you see, the problems of artificial beings are not any more on the level of a mere scientific experiment. These beings exist in our world and their activities sometimes make parts of legally regulated processes. Current law does not admit any special status for these beings but there already appeared discussions if these beings should have their own legal subjectivity.

The task of this article is to specify a term “artificial being” and to describe problems of artificial beings at first *de lege lata* and then also *de lege ferenda*. In these two legally oriented parts we will explore different options of the artificial beings' positions in legal relations and try to answer a question whether and under which circumstances it would be just to award artificial beings with legal subjectivity.

Definition of an Artificial Being, Relationship to Robotics [2]

If we want to speak about artificial beings, their definition is for the right comprehension necessary. As it was mentioned above, there is no legal definition of the term “artificial being”. The definition for our purposes will be derived from a technical literature treating of artificial intelligence.

An artificial being is a system artificially created by a human. This system has abilities to react on the environment, in which it exists, to change this environment and to gain its aims in this environment.

Artificial beings are created and arise as computer programs. They are saved on digital media. So they do not have any biological basis. In the connection with artificial beings it is necessary to mention a term cyberspace as a certain digital space in which these beings exist and which can be influenced by them. Besides the cyberspace is a digital space for programs and digital data, it also functions as “a technologically mediated area for social interaction”.¹ So the cyberspace enables people to communicate not only among themselves but also with artificial beings.

With the term “artificial being” a term “virtual being” is closely connected. The notion of the “virtual being” is wider than the “artificial being”. Virtual beings are artificially created creatures that exist in the cyberspace. Generally we can divide them into two groups:

1. Members of the first one have no intelligence and can be called only virtual beings
2. Members of the second group are equipped with some intelligence – they represent the artificial beings with all the above mentioned abilities

Because artificial beings are very often connected with robots, we should also clarify their relationship to them. However this relationship is rather different from a common point of view. Robotics played a significant role in the development of artificial intelligence. The term artificial being was joined with imaginations of some machine with a human-look or with imaginations of machines of an animal or other look. Robotics, which could be the cause of thoughts about development of artificial intelligence, has now another position – a position of an application sphere of artificial intelligence. Robotics now represents self-contained scientific and technical discipline.

In our opinion this is a declaration of a fact that an artificial being is understood as a system, a computer program, not the media on which it exists. Little bit confusing can be a fact that artificial beings acting in robots have possibility to come out materially outside of the cyberspace. The most significant manifestations are mainly robot's movement, manipulation with objects, overcoming of difficulties etc. But it is necessary to make an

¹ Polčák R., Škop M., Macek J. (2005), *Normativní systémy v kyberprostoru - úvod do studia*, Brno: Masarykova univerzita v Brně, p. 9.

important question: If some artificial being can treat purchase orders, thus participate substantially in a contracting process and save to its owner high amounts of money, is it not also a material manifestation of the artificial being? In our opinion of course it is, because this act has also impact on the world outside of the cyberspace.

Artificial Beings de lege lata [3]

As it was already said, law itself does not know the term “artificial being”. In this part we will discuss the situation of artificial beings de lege lata from the Czech legal system point of view.

The content of the term “artificial being” is regulated as a computer program. The content is regulated with the Copyright Act no. 121/2000 of the Coll. Although the copyright law has no special definition of a computer program, we can draw this conclusion by using the method of elimination. It is an indisputable fact that an artificial being is a work that originates from an intellectual activity and we cannot subsume it as a whole under the legal definition of another work. We can help ourselves also with other legal definition that describes a computer program as “a file that contains a system of commands' sequence that directs machine activities for purpose of requested result accomplishment”.²

The area of a computer program regulation is in the Copyright Act oriented on protection of author's right to his/her work. A computer program is considered to be a work if it is of an author's own mental creation. A program has to be a unique result of a programmer's creative activity and must be expressed “in any objectively perceptible form including an electronic form, permanently or temporally, regardless of its extent, purpose or sense”.³ A computer program is protected as a literary work.

Because of the fact that artificial beings need for their functioning various collections of data and information it is necessary to mention also a legal term “database”. The database is legally characterized as “a collection of independent works, data or other elements, systematically or methodically organized and individually available by electronic or another means

² Instruction of the Department of Justice no. 75/99-OI

³ §2 of the Act no. 121/2000 of the Coll., Copyright Act.

without regard to the form of their expression".⁴

Artificial beings can have their pictorial expression that is protected by the Copyright Act as an artwork too.

So finally we can summarize that artificial beings are usually legally protected as computer programs and databases and if they have also graphical expression, the law protect them also as artworks.

Artificial Beings de lege ferenda [4]

Regulation of artificial beings de lege lata is constructed on "a virtual thing in legal sense"⁵ concept. But this conception is not the only one possible solution. From viewpoint of a legal relationship structure it is feasible to ponder over another concept – awarding legal subjectivity to artificial beings.

Discussion about Awarding Legal Subjectivity to Artificial Beings [4.1]

With respect to abilities of artificial beings there begin to appear discussions if these legal objects should have the position of subjects of law. In such a case artificial beings would have rights and obligations. At present time these systems do not fulfill legal criteria for awarding legal subjectivity.

The reason why there arose the dispute about awarding legal subjectivity to artificial beings is a fact that thanks to the artificial intelligence development these entities are no more passive mediators or automated means of achieving aims but active autonomous systems with an ability to learn from their own experience and to take control of themselves. There appeared an argument that if these systems are able to impersonate human thinking in such a way, we should devote our attention to investigation of the possibility of artificial beings' individual will existence. L. Solum believes, that "a system which achieves self-consciousness is morally entitled to be treated as a legal person, and the fact that self-consciousness does not emerge from biological processes should not disqualify it from legal personality".⁶

⁴ §88 of the Act no. 121/2000 of the Coll., Copyright Act.

⁵ Polčák R., Škop M., Macek J. (2005), *Normativní systémy v kyberprostoru - úvod do studia*, Brno: Masarykova univerzita v Brně, p. 14.

⁶ Allen T., Widdison R. (1996), *Can Computers Make Contracts?*, Harvard Journal of Law & Technology, Volume 9, Number 1, p. 35.

The debates are also often lead with an idea that these intelligent beings can be for us equally matched partners in communication and also they are able to solve very sophisticated tasks.

But there emerged also an opinion that “freely developing autonomous artificial entities must be considered as potentially dangerous for an organic life and must be under supervision of some control mechanism at least for the time until their potential is not fully clarified”.⁷ This reflection is connected with research of artificial life. In this context Ch. G. Langton's opinion on the artificial life is interesting: “The life is an attribute of material organization, not an attribute of material that is so organized. Nothing inhibits such definition of life, which would not presume its creation on the basis of carbon chemistry. Microelectronics and genetic engineering will soon provide us with the ability to create new forms of life as in silico so in vitro.”⁸

Besides awarding legal subjectivity to these systems there also appear opinions that with respect to the level of their intelligence the mentioned systems should be protected in some way by reason of a fact that law protects animals although animals have no legal subjectivity.

From the above-mentioned opinions we can see that there are pronounced tendencies to designate the artificially created systems because of their autonomy as “alive” and there emerge proponents of awarding legal subjectivity to these systems – beings.

On the other side there are many reasons why not to award these intelligent systems legal subjectivity. David Lewis's quotation is in this case very apposite: “Even if you let fall down a ton of apples on a computer it will never invent the law of gravity.”⁹

The first reason is a fact that we are speaking about artificially created things that are on the basis of information given them by a human, a being gifted with natural intelligence, able to perfectly simulate outer world in the environment of the cyberspace. This was also a topic of a conference in Dartmouth in 1956 where there was a fact that we can describe every symptom of intelligence so exactly that we can also evolve a machine simulating this intelligence discussed.

⁷ Mařík V. a kol. (2001), *Umělá inteligence* (3), Praha: Academia, p. 112 – 113.

⁸ Mařík V. a kol. (2001), *Umělá inteligence* (3), Praha: Academia, p. 76.

⁹ Mařík V. a kol. (1997), *Umělá inteligence* (2), Praha: Academia, p. 11.

Artificial beings were created as a virtual device which purpose is to make human's life easier. They are only a higher form of any another tool that is serving people.

Another argument why not to consider artificial beings to be living creatures is absence of "common sense" or "natural judgment".

Legal Subjectivity [4.2]

If we want to answer the question of awarding legal subjectivity to artificial beings, at first we have to solve these questions: What is legal subjectivity? What is its content? Who and by what reason is awarded with legal subjectivity?

Legal subjectivity is a quality given by law. It contains capacity to have rights and obligations, capacity for legal acts and capacity for illegal acts. Full legal subjectivity is at the present time awarded to real persons and legal persons.

Very interesting question is why does the law award particular persons with this subjectivity.

Humans for purpose of their own protection created the law. The primary human need is to preserve its kind. When humans awarded themselves legal subjectivity, they ensured the protection of individual's life, health, personality, dignity and other values. Legal subjectivity of real persons is natural, original. It is given by animate nature of a human as a law creator.

Legal subjectivity of legal persons is more complicated question. This subjectivity is created artificially. It is derived "vitally from subjectivity of certain circle of real persons",¹⁰ but then the subjectivity is independent of the primal subjects. It means that subjects creating the legal person can change, but some subjects creating this legal person must always exist. People awarded legal subjectivity to legal persons for purpose of their needs' better satisfaction with more effective aims' achievement. A legal person is a type of artificial mechanism that functions accordingly to rules determined by people.

For all-embracing description we should also mention the legal position of animals. Animals are awarded with one element of legal subjectivity –

¹⁰ Fiala, J. a kol. (1993), *Občanské právo hmotné, 3. opravené a doplněné vydání*, Brno: Masarykova univerzita a nakladatelství Doplněk, p. 74

capacity to have rights. Because of mental divergence animals are not able to understand what the law is. That is also the reason why another elements of subjectivity cannot be awarded to them. The first motive of animals' protection is securing of food for people. Other motive can be a fact that humans consider themselves to be advanced beings that gained control over the world. So people are morally responsible for its further development. People realize their responsibility therefore they protect animals with law.

If we consider why a human awarded legal subjectivity to real persons, to legal persons and in very limited degree also to animals, there comes a question why he/she should do the same in case of artificial beings. The reason is that there are many similarities between artificial beings and legally approved subjects. Artificial beings and real persons are connected with intelligence and the same way of thinking. We should not forget that law protects not only a human body but also mind. As an example we can mention creative mental activity that is protected with copyright law. Legal persons and artificial beings have a common creator on which they are fully dependent – a human. Both entities are artificially created.

As we see, artificial beings have with real persons and with legal persons much in common. Also only real and legal persons have full legal subjectivity. So what is the criterion that connects real and legal persons and which would justify awarding full legal subjectivity to artificial beings? The answer is *law understanding*. And with law understanding there also comes requirement on *self-consciousness* and *own will* so the law can be fully applied on artificial beings.

Conditions for Legal Regulation [4.3]

At the present time there is actually no artificial being, which would fulfill the criteria of law understanding, self-consciousness and will. But we should think to future. We cannot foreclose creation of such an artificial being. This being would be righteously entitled to be a subject, not an object of law. With this idea there arises a question how should legal regulation of artificial beings' legal subjectivity look like.

In view of the fact that artificial beings are partly similar to real and legal persons, but at the same time they vary from these persons, it will be

necessary to create another person in legal sense especially for artificial beings.

As there are conditions for awarding full legal subjectivity to real persons, from whose subjectivity the subjectivity of legal persons is derived, there also should be conditions for artificial beings' legal subjectivity awarding. We already mentioned that legal subjectivity has three components: the capacity to have rights and obligations, the capacity for legal acts and the capacity for illegal acts. To awarding full subjectivity, or at least part of it, an artificial being should prove that it has qualities needed for performing rights and duties related to particular capacities. To being awarded with the capacity to have rights and obligations an artificial being should prove self-consciousness for rights and understanding for obligations. Concerning the capacity for legal acts the capacity to have rights and obligations is necessary and also an artificial being should prove its own will. The question of the capacity for illegal acts is problematic. In regard to a fact that people do not yet have experiences with artificial beings on such high level of intelligence and self-consciousness, it is not possible to say if artificial beings will be able to act illegally at all.

In case the mankind will invent artificial beings on the mentioned level and will award them legal subjectivity, it will be essential to solve many problems connected with the subjectivity, e.g. legal liability for illegal acts or extent of entitlements. Many queries will be solvable with help of analogy. However it will be necessary to respect specifics of their formation and the environment in which artificial beings exist. Also legal regulation of relationship between an artificial being and its creator will be indispensable. Not even legal regulation of artificial beings' formation may be leaven. In the humankind's interest artificial beings cannot be created in a way that their aim would be to harm people.

Autonomous Intelligent Agents and Multi-Agents Systems [5]

Autonomous intelligent agents and multi-agents systems are contemporary hot legal topics. There can be found various opinions on their liability and legality of legal relationships set up by them. At first we should

define an autonomous intelligent agent. An intelligent autonomous agent is an example of an artificial being – it is a system, which is situated in certain environment, receives incentives and performs certain actions by itself. Autonomy should be comprehended as an ability to perceive an outer environment through own sensors.

Multi-agents systems are systems where there exist more autonomous agents, which represent their users and decide by themselves according to their own consideration. These systems are very often used in the sphere of mobile networks or e-commerce. There the agents work for money, for example they buy and sell things. They are intelligent, so they do not buy goods more expensive than it is necessary, they compare quality, price and utility. They present the most significant element of the contracting process. Now there arises a question: Should they be liable for their acting?

The answer is no. When we were talking about artificial beings generally, we found out that for delegating responsibility in a way, which would have a sense, it is indispensable for artificial beings to understand the law, have self-consciousness and own will.

Currently artificial beings are only tools in hands of a human and for every their action either their creator or their user is responsible. This depends mostly on the contractual regulation of relationship between an artificial being's creator and its user.

Conclusion [6]

When recapitulating all known information we come to the conclusion that contemporary legal regulation is sufficient. Artificial beings are not yet so developed and awarding them legal subjectivity would have no reasonable sense now.

However no one has been yet successful in foreclosing a fact that scientists can once create a system that would have characteristics entitling it to awarding legal subjectivity. In this development sci-fi literature plays very important role, because it presents aims to scientists and enthusiastic supporters. It is a matter of a personal prestige to be the one who succeed in creating a being that is similar to a human. Such a thing has been up to now done only by the God or some space regularity so far unknown to people. If

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we get to the final consequence of this reflection, we will find out that the pursuit of creating living artificial being will maybe give us the answer if the life is an attribute of the right combination of organization and composition of matter, so the materialists are right, or we will find out that the idealists were correct and the essence of life is unsubstantial. But now we can only guess.

We hope that contemplations over future legal regulation of artificial beings will contribute at creating of their general character.

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