

ROBOTICS, BIONICS AND FUNDAMENTAL RIGHTS. ISSUES AND LIMITS OF ARTIFICIAL INTELLIGENCE

PAOLO MORO

Professore straordinario di Filosofia del Diritto

Dipartimento di Diritto Privato e Critica del Diritto dell'Università degli Studi di Padova

paolo.moro@unipd.it

1. Technological applications of robotics and bionics engender new problems for the lawyer of contemporary era, amongst whom particular relevance has the protection of some fundamental rights of the human person involved in the interaction with the most evolved devices of artificial intelligence.

Recurring also to robotics, bionics develop cybernetic auto-organising systems, which are devices provided with intelligent skills, such as recognise external stimulations (counter-reaction) and adapt to environment (homeostasis).

While the robot and the man keep however being physically distinguished entities, in the applications of bionics man and the machine are not separated but represent an integrated system where the interaction between subject and electronic prosthesis is not managed in a conscious manner.

The artificial bionic device is configured as a new type of prosthesis, which not only can consent to recover lost functionalities, but also to strengthening existing functionalities or introduce new functionalities, although admittedly a precise boundary line between recovery and strengthening of motion or cognitive abilities.

2. It is convenient to consider that the use of bionic prosthesis is invasive and constitute a mutation of physical and psychic integrity of the person, capable to interfere with the fundamental rights of the person.

In fact, in case of controversy between the physician performing the implantation and the patient subjected to it, the possible grafting in the human body of a bionic prosthesis may be considered a treatment harmful for human dignity (art. 1 Charter of fundamental rights of the European Union), of physical integrity (art. 3), of individual liberty (art. 6) and of privacy (art. 8).

Moreover, an intervention of bionic strengthening of a bodily organ may engender the doubt whether the medical treatment may be considered harmful for human dignity and for the identity of the person.

On the other hand, the bionic non-therapeutic intervention may represent an endangerment, if not a violation of the fundamental rights to personal liberty and individual privacy.

Another legal question concerns the nature and limits of the consent to the bionic intervention, which, as in any other case of medical treatment, requires the specific and informed consent of the patient subjected to the implantation.

In such case, Italian law establishes that the consent of the interested subject in a penal controversy and the preventive transaction in a civil controversy are not effective when they concern non-disposable rights, since it is not clear whether the interested subject may dispose the changes and the projecting of his own identity recurring not only to the recovery of reduced biological functionalities, but also to the strengthening of such functionalities with the implantation of a bionic device.

In particular, the consent of the interested subject (art. 50 Italian penal code) is the legal institute which creates a point of contact between criminal and civil law, since it justifies a fact which is in the abstract defined as a criminal offence, protecting at the same time the autonomy

of the victim's will, but with a limitation: the holders of so called disposable legal situations may prevent the punishability of certain behaviours by consenting to the harm of these situations, while punishment shall be however applied, notwithstanding the consent, when the harm to so called non-disposable rights, that is subtracted to the authorisation power of the damaged, took place.

So, within the positive legal order, a new criterion appears, which, excluding any relevance to the will of the harmed not to oppose to the harm, thus preventively abandoning the request of reintegration offered by punishment, reinforces the foundations of the constitutive principles of any crime: the violation of a non-disposable legal good constitutes in any case an harmful offence which, therefore, requires a reparation also when the offended manifests a contrary intention giving its consent to the harm. Thus, the primary source of what shall be protected always and anywhere is non-disposable and it is subtracted not only from the will of the State (and therefore, from criminal law), but also from the consent of the offended, who cannot renounce to the opposition because his will has not the power to exclude the harmfulness when there is a violation of what shall necessarily be repaired.

Since law does not provide an explicit catalogue, the most relevant and most debated question in the analysis of the cause for justification *ex art. 50* of the Italian penal code concerns precisely the definition of non-disposable rights, the violation of which makes ineffective the possible consent of the holder of the right. When they interfere with fundamental rights, such as life, physical integrity, personal freedom, privacy and more generally with human dignity, robotics and bionics engender new hermeneutic problems in case of controversial interpretation of what is disposable and what is not.

Thus, the violation of non-disposable rights may represent a valid criterion of minimal foundation of criminal law, by attributing the value of criminal offences to a significant nucleus of harmful behaviours actually interfering on the structure of human subjectivity.

4. The possible violation of fundamental rights of the person in case of interaction between man and machine mandates the need for a reflection on the cultural origin and, in particular, on the anthropological question constituting the theoretical foundation of robotics and bionics.

The historical roots of robotics and bionics date back to the studies on cybernetics and on artificial intelligence of the second half of the twentieth century.

Indeed, the theoretical basis for the functioning of robotic systems, which are non-intrusive, and bionic devices, which are intrusive, is the mathematical study of neuronal systems, which brought to the researches on artificial intelligence and to the elaboration of a general theory of automata, constituting one of the fundamental problems of cybernetics.

The rationalist vision contributed in founding the artificial intelligence programs on the scientific method and led to the framing of machines and biologic systems capable to exhibit a finalised behaviour within common schemes of algorithmic origin, confirming the mathematical premise of cybernetics.

In particular, the cybernetic evolution of analytic rationalism has far historical roots, dating back to the late Middle Ages and to the aurora of modern philosophy, where there were many attempts of mechanisation of thought through the canons of formal logic and mathematics.

5. However, it seems convenient to discuss whether and in what measure distinctive characters of the human being (such as conscience and will) may be transferred to a robot or a bionic device.

The scientific literature of the twentieth century constantly presupposes an analogy between man and machine and, in particular, between artificial intelligence and natural conscience.

It is known that already in 1936 the British mathematician Alan Turing projected a machine capable to exhibit operations typical of human mind.

In 1948, Norbert Wiener maintained the theoretical impossibility of distinguishing the human nervous system from a mechanical communication system such as the telephone.

In the chapters of his *Cybernetics*, added in the 1961 edition, Wiener introduces some issues which are destined to become central arguments in the research on artificial intelligence, such as automatic learning and the development of artificial systems capable to auto-organise and auto-reproduce themselves.

In 1950, Turing defined the famous *Imitation Game*, a test to establish whether a computer may elaborate a human thought: that is to say, when, by asking a calculator without seeing it, a person cannot distinguish whether it is another person or rather a computer.

The conception inaugurated by Turing is rooted in the European mathematism of modern era, since it raises from the belief that, contrary to what happens in different human situations, subjective behaviour is not formalisable through rules.

However, cybernetics keeps being in contrast with the never completely predictable nature of the activity developed by human intelligence.

Automation, which characterises at least partially every artificial intelligence system and which represents a constitutive element of informatics (expressions which derives from the crisis of "automatic information"), is not the reproduction of human behaviour or of mental activities.

Consequently, such universal mathematism of mind, compliant with Turing's computational project, excludes any form of creativity, which is nevertheless considered the qualifying character of intelligence, and requires that the mind execute totally automatic operations exactly like a machine.

Thus, the computational perspective, which constitutes the origin of studies and projects of artificial intelligence, shall keep into account also the thought's ability to redefine itself, going beyond itself, that is to say, of an infinite ability and, therefore, subtracted from any calculability, which is one of the distinctive and irreducible forms of human intelligence.

Finally, there are at least two mental proceedings which, at least at the current state of cybernetics and the evolution of artificial intelligence, computers are not able to replicate or to formalise: the intellectual intuition, which consents the individuation of what is "whole", and the self-control, which is realised in the critical consciousness of the limit of reason and of every true knowledge.

6. With a conclusive reflection which is opposed to any illusory rationalistic anthropology, we must add that the human thought is a form of life and that such a life form is original and different from that however re-constructible with artificial intelligence.

Indeed, also in its empirical manifestation, the ontological structure of human conscience is relational. Therefore, also admitting that the reticular connection of different calculators where expert systems "run" may be equalled to inter-subjective communication, there is no doubt that computers in any case could be subjectively attributed with actions of which it must objectively respond, as in the case of behaviours referable to software agents: differently from artificial intelligence and for its own nature, human conscience unite in reciprocity cognitive thought and moral action, with the consequence that the subject may be the holder of rights and duties also legally relevant.