

EDMONDO GRASSI¹

ETHICS AND HUMANISM IN THE MACHINE ERA

Abstract

In a society based on technology, the human being loses their centrality and triggers the fourth revolution by means of scientific advancement and digital progress: that of the rupture of anthropocentrism, of industry 4.0 and of the infosphere. The scientific and academic debate must focus its attention, among various elements, on the formulation of new ethical principles that can guide a person in their interaction, interconnection and, in some cases, “fusion” with the “machine” and its accompanying values. The advent of artificial intelligences is producing changes in the management of common liberties, of private and public life, of the individual and of the community, which increasingly seek in the “artificialisation” of the self and in their relationship with machines, places, subjects, reflections of interaction with each other and with the other self. The sophistication of technology and, therefore, of reality indicate the need to re-think the relationship between the tangibility of the natural and its mechanised-digitalised representations. What will be the ethics of the future? What are the values to support in the new revolution that sees the person flanked by the machine? What are, at present, the global choices on these issues?

Key words: artificial intelligence, ethics, machine, human being, digital life

¹ PhD Candidate; Roma Tre University; e-mail: edmondo.grassi@uniroma3.it.

INTRODUCTION

*Mentre cercavamo senza successo
di inscrivere nel mondo
un'intelligenza artificiale forte e produttiva
stavamo viceversa adattato il mondo
ad un'intelligenza artificiale leggera e riproduttiva.*
(Floridi, 2014, p. 142–143)²

If the last century was marked by rationality, unlimited progress, the centrality of the human being and the great ideologies, today, people find themselves living in a society in which the individual and their representations seem to be losing, at an increasing rate, the boundaries that delimit and characterise one's identity. Observing and analysing the changes that are taking place becomes an increasingly complex and delicate activity, since the individual is the object of their own scientific and technological progress, of their productions, triggering the rupture of anthropocentrism, and not being master either of themselves or their surrounding environment (Floridi, 2009). It has become, in part, a succubus of its creations and is subject to

irrational structures, because it is devoid of any logic in which the subject can recognise himself and also lacks any moral value; the rational universal (from an ethical point of view, duty) is no longer the place of identification of the individual, and indeed is now a compulsion external to the subject (Galli, 1997, p. IX).

The human being, from having inhabited a society of risk (Beck, 2000) through that of crisis (Touraine, 2012), up to that of narcissism (Cesareo & Vaccarini, 2012), lives, today, in an artificial society, characterised by an ultra-accelerated technological progress with respect to the evolution of the self; it has always been a naturally technical entity and, in contemporary society, a part of what is technology has become pre-eminent in the progress of the person and of the environment they live in, namely: applied technology.

Human beings are experiencing a fourth industrial revolution, namely Industry 4.0 (Kagermann, Lukas & Wahlster, 2011), that of supercomputers,

² “While we were unsuccessfully pursuing the inscription of strong, productive AI into the world, we were actually changing the world to fit light.” All translations come from the author of the article unless indicated otherwise.

intelligent robots, autonomous vehicles, the rewriting of the genetic code thanks to technological implementations, in which data – Big Data – becomes the unit of measurement of a person, in a historical period in which industrial automation will be marked by cybernetic systems that will spread into every area of daily life of the human being (Davis & Schwab, 2018): this will be the era of artificial intelligence, of a new social actor – one could already dare to give them the value of real agents of confrontation – that will arise in a dialogue with a person, because, as said by Sabine Hauert, member of the Royal Society’s machine learning working group, “artificial intelligence is already around us in a series of practical applications”.

In this context, we cannot consider the individual as a strictly “natural” element, such as any animal that exhausts its function in the evolutionary process of nature, which has as its aim the need to make itself suited to the changes in the ecosystems that they inhabit. However, the individual is an entity that by means of an instrument, of a prosthesis external to its own body, affirms its existence, its abilities, its identity and its evolution: when the first human being used a stick to collect fruit from a branch which was too high, there was the first manifestation of the technique that dwells in their being. Moreover, people appear to be totally immersed in a chameleonic structure becoming a predominant element, albeit not the only one, of what will characterise the relationships and society of the future.

People and society find themselves in a historical moment in which even the description of a social fact seems to have become obsolete, since the narration of the near future is founded on semantics based on the past, losing some nuances of what will be manifested. Humanity will have to acquire tools that allow it to analyse the changes in the cultural and social paradigms hitherto considered solid. In particular, it will have to re-examine the values, myths and cardinal principles of society: it is essential to conceive of new ethics that contemplate the relationship between people and machines as “the technological consequences of science have now a universal reach and require an ethical rebirth” (Russ, 1997, p. 7).

What is new will need to be understood in terms of its individual value, in the political and economic context, but more than anything else, on the ethical responsibility inherent in the governance of innovation: if technological progress and its discoveries are necessary, what parameters should be adopted for the evaluation of artificial intelligences? Who will be directly responsible for their actions? Which elements will distinguish the relationship

between the individual and artificial intelligence? Do human beings find themselves having to recalibrate the magnet of their ethical compass?

The relationship between what until now was considered real and what was virtual is losing its boundaries, transforming society into what can be defined as the space of the infosphere (Floridi, 2009), a change sustained by the sophistication of digital devices which have permanently invaded everyday life. Thus, we have moved from an instrument without logical capacity, but one necessary to the individual for the achievement of its goals, to systems and advanced algorithms able to communicate with each other (OVUM estimates that in 2021 there will be 733 million M-to-M cellular connections, presenting the results in its latest study *Cellular Machine-to-Machine forecasts: 2016–2021*). They can also exploit predictive capabilities to help the user, modelling reality and incorporating it into a dimension in which space and time lose their value: artificial intelligences are manifested as immanent elements in the life of a person.

As the ethical purpose of these changes is considerable, it is necessary to reformulate the dialogue between the different scientific disciplines, where engineering will need the philosophy or the mathematics of sociology, since we are in a phase in which a gradual but ineluctable dematerialisation is taking the place of the reality so far conceived (Maldonado, 2012).

From these and other aspects, the need arises to request new ethical guidelines that can help the person to evaluate and contain the technological evolutionary leaps of the fourth revolution, not only that which is industrial, but also social, understanding that ethics is a moment of dialogue for the construction of one's own liberties in a context where unconditional actions could take place. The pervasiveness of contemporary and future technology shows that its influence "does not only manifest itself in terms of concepts or opinions, but much more deeply in the generative structures of the processes of formation and reception of concepts and opinions" (D'Amato, 2012, p. 16).

Faced with the creation of new responsibilities, the demand for new rights, the conception of new forms of creation, the person-machine hybridisation and artificial intelligences, even if weak, which are ever-more evolved and able to understand some social patterns of being human, the urgency of a shared ethic seems to become the only instrument capable of giving a stronger historicity to this community and of bridging that artificial gap which is artificially expanding, albeit even in a more human manner.

GHOST IN THE SHELL: HOW TO CONCEIVE ARTIFICIAL INTELLIGENCES

Can machines think?
(Turing, 1950)

The idea of generating machines that are able to emulate the capabilities of a human being, not only those physical but also mental, has always been one of the main ambitions of human intellect and research. In the fictional world, we can find “sources” that attest to the human will to give life to their creations. From the myths of Ancient Greece, such as that of Pygmalion, who, devoting himself fervently to sculpture, fashioned the most beautiful statue from a block of marble. He slept by its side for days and, finally, he asked the goddess Aphrodite to grant it a real body, in order to be able to interact with it. His intent was to make his creation more real than reality, to the point of making it his bride and procreating with it, a myth that we also find in *Blade Runner 2049*, a film in which a human being comes to procreate with an android.

As in the Jewish legend of the **golem**, where through the knowledge of the Qabbalah, human beings have the power, in this case between the divine and the esoteric, to create a giant of clay and use it as a slave. This is a legend that unites the progress of learning and knowledge concerning advances in the domain of the body and human anatomy being transferred to another being, with the intent of subjecting it to its will, since the golem was incapable of thinking autonomously, but acted according to the commands it received, and was not able to feel emotions, neither having a soul nor a conscience.

In 1816, Mary Shelly used the metaphor of Dr. Frankenstein’s monster to conceive one of the first forms of modern hybridisations between a biological body and a technical-technological instrument. In her novel, there is a clear and relevant critique of the first industrial revolution, delivering within it and to its readers specific questions, namely: is progress dehumanising the person? Is human nature and its identity formation changing? Are human beings losing their moral compass?

It was at the beginning of the 20th century that society began to question itself with greater attention placed on the implications of technological progress and the will to power in order to generate increasingly powerful machinery to aid the daily life of the individual. It was in the fictional world that the word “robot” was introduced for the first time,

in *R.U.R. – Rossumovi univerzalni roboti*, a 1920's sci-fi utopian drama written by Karel Capek. The word comes from the Czech *robota*, that is 'work' and, in Capek's piece, robots are replicants, real organic humanoids, that could evoke the transhumanist currents of contemporaneity, used to free humanity from physical work. It is important to reflect on the value of language and speech, since the former is the foundation of humanity and social relations, being able to play, by means of the latter, the role of a knot, that of the first weapon in a conflict. In this case, *robota* indicates the will to conceive the production of intelligent machines as tools underlying the choices and power of human beings to become a demiurge of a new race. In this view, the anthropocentric representation of the individual is found, until the machine is aware of its potential, or until it becomes an immanent element in the cultural and behavioural models of society, as is happening in the contemporary world.

The development of artificial intelligence, of robotics, of biotechnologies poses open questions such as: will the diversity born of invasive and speculative technologies replace the concepts within the biological system known up to now?; although the multiplicity of possible interventions on the nature of being requires the redefinition of new ethics, will we be called to define the former ethics as posthumous?; should we conceive new social actors who need different rights and regulations within the same social context?

While these are very broad questions which the scientific and academic community is called upon to answer, one question, above all, is that which will concern the future of artificial intelligence, namely: will machines be able to think?

This question was first posed by Alan Turing in the article *Computing Machinery and Intelligence*, published in the journal "Mind" in 1950, and gave rise to the beginning of the debate on the relationship between the possibility of a "thinking" machine and its capacity, therefore, on the possibility to imitate the behaviour of a human being. Turing wrote that if a machine had to replicate human reasoning systems, it would have to elaborate an intelligent mechanism that could detach itself from a "completely disciplined behaviour involved in computation, but a rather slight one, which does not give rise to random behaviour, or to pointless repetitive loops" (Turing, 1950, p. 459).

To test this hypothesis, the English scientist proposed an "imitation game" which contemplates the participation of three players, namely:

a human being (A), a programmed computer (B) and an observer-investigator (C). The latter, who is located in a place where they cannot see the other two participants, has the task of asking questions to both with the purpose of arriving, through the answers received, at understanding their nature, namely what is human and what is machine. If the observer is not able to distinguish the computer from the human being, we may assert that the machine is able to replicate human thought, at least in its interaction with others, and therefore can be defined as intelligent. As one can see, Turing's approach is behaviourist and, in this regard, he was strongly criticised, both for his methods and for his statements. However, his studies and research on the possibility that artificial intelligence could replicate human intelligence provided the chance of giving life to the discussion on the nascent cognitive sciences.

In 1956, Allen Newell and Herb Simon developed the first thinking machine in history, namely the Logic Theory Machine, one which was able to solve mathematical problems. In the same year, it was thanks to John McCarthy that the term "artificial intelligence" was coined during the Dartmouth Summer Research Project on Artificial Intelligence, a conference on the possibility of simulating human thought by means of machines, held at Dartmouth College, with the intention of proceeding

On the basis of the conjecture that, in principle, every aspect of learning or any other characteristic of intelligence can be so precisely described as to be able to construct a machine that simulates it (McCarthy, Minsky, Rochester & Shannon, 2006, p. 12).

This last statement could echo as a sort of utopian ideal, and this must be so, albeit with a clarification. Utopia must not be synonymous with something impossible, unrealisable and oneiric, but probable and hypothetical. It must be a project that is drawn up to cross the limit observed so far, allowing learning and knowledge to advance in its path: utopia as a regulatory ideal.

Being able to delineate the characteristics, values and patterns of behaviour of the present is becoming an increasingly complex activity, since the individual is in the middle of a society marked by change while being able to describe the currents and impacts with contemporary words, this often denoting a lack of skill and ability, since it is the semantics that are not suitable for grasping the possible worlds that may manifest themselves.

The relevance of speech and communication are fundamental for understanding the technological development and the ethical and moral implications of the individual's freedom, since the two phenomena are radically connected and influenced, and paraphrasing Wittgenstein's studies, one may state that it is language that must be able to adapt to social changes and not the opposite. If one tried to describe the interpretation of the manifestation of a new phenomenon with existing language, one would come to issue an erroneous conclusion about the nature of the facts.

In this way, as Floridi (2017) states, to understand at what point contemporary humanity and artificial intelligence, defined as weak, is in the history of technological development, we need to consider two fundamental parameters, time and space in their present forms, namely: hyperhistory and the infosphere.

Technology is advancing at a speed which the evolution of human beings cannot reach, confining it to the realm of its simplest drives that define its approach to digital devices and artificial intelligence, which will occupy more and more segments relevant to their life. The construction of a semantic meaning more closely related to the machine is necessary, one that is able to conduct a discussion on the deep implications implemented by information and communication technologies (ICT). Contemporary society has crossed the threshold of entering into an era of hyperhistory, which may be defined as that moment in time in which "the progress and well-being of humanity have begun to be, not only connected to, but above all dependent on effective and efficient management of the information life-cycle" (Floridi, 2017, p. 3). Moreover, in this historical period, for the first time, we are witnessing the advent of third-order technologies, i.e. those artificial systems that are connected to other systems by means of yet other systems, namely the moment when a machine communicates with other machines (MtoM learning), able to record, process and transmit increasingly complex data and in an increasingly autonomous way, managing to define interrelations hitherto unexplained by any cognitive system. The infosphere society, that is, hyper-communication, which includes both digital-telematic-artificial channels and classic media, has become the space in which human beings confront themselves and others and where ICT and information are the primary resource for growth and relationships. The infosphere contains both the "online and offline world", thus becoming synonymous with reality, where the boundaries between the imaginary and real blend, leaving the flow of data the possibility of defining what one is.

In December 2017, in Cremona, Italy, the robot-postman YAPE (Your Autonomous Pony Express) independently carried out its delivery through the streets of the city, using its sensors as senses to be able to move among human beings and acquire information on the surrounding environment. These are the first steps of a company that will see, in the future, the sharing of the same space between people and machines. Already in 2016, in New York, the Starship robot was released, conceived by Starship Technologies, with the task of delivering food at home, thus becoming the object of study by large companies in the sector. Perhaps we will come to have robots with artificial intelligences such as those imagined in the *Black Mirror* episode entitled *Crocodile*?

Like all technological innovations, even artificial intelligence, wanting to point towards the wide spectrum of the new existing systems, predisposes changes. This is a question of new and different social changes from those that have been explored so far, since the algorithms underlying the evolution of artificial intelligence, for example, are not entirely predictable.

If the machines of the industrial revolution could have hypothesised limited, circumscribed, latent and manifest scenarios of the future, this new artificial revolution makes it difficult, at the present time, to identify the hypotheses of change. First of all, this is because it involves all social areas and consequently all knowledge but, above all, because intrinsic evolution raises the question of the centrality of the human being and of their relationships. In this regard, it is necessary to solicit an updated ethical reflection on a reality in profound transformation, on opportunities, but also on the risks that this entails. Philosophical and sociological questions reaffirm the need for an interdisciplinary vision of the technological innovation that artificial intelligence implies and places upon anthropology, politics, psychology and law, the need for a redefinition of anthropocentrism and the role of the person.

In trying to summarise what the relevant elements for a discussion on ethics and artificial intelligences in the human sciences are, one could say that the latter:

- have become immanent elements in human society;
- have no limits of space and time (infosphere and hyperhistory);
- are changing the daily perception of human beings in terms of their relationship with the surrounding environment and their relationships with others;
- have produced the rupture of anthropocentrism;

- can become tools to improve and increase the principles of responsibility, cooperation and equality.

The question of technology is essential in defining the organic development of society and is linked to the rediscovery of new ethics: “seeing ethics as a meta-moral moment, a rational moment, which appeals to our freedom and which is constitutive of our freedom” (Ardrizzo, 2003, p. 16). While waiting for computers or robots to become capable of thinking – to date they are only able to perform specific orders to the best of their ability or carry out some tasks faultlessly – what is required of people is to be able to produce responsibilities and formulate better approaches for advancing the social understanding of artificial intelligence.

ARTIFICIAL ETHICS AND THE SPIRIT OF TECHNOLOGY

It is important to define the difference between technique and technology, where the first is to be understood as the *téchne*, the know-how, then the set of all the knowledge and tools that contribute to the execution of intellectual and manual activities, the second is the technical application of knowledge and indicates the reciprocal relationship between the two elements.

Technology is the environment in which we live, structuring itself as the dimension to which we demand, in a manifest or latent way, the possibility of crossing the limits naturally imposed on the human being: we must conceive it as that element capable of enhancing the abilities of the individual and of changing the social paradigms towards a collective improvement, having the ability to trigger a crisis not concerning the material level of its advancement, but the type of disclosure that humankind practices through it.

Moreover, like technique, technology itself has an ethical-value-bearing capacity, so it cannot be considered purely as a neutral element at the service of the person, since, as Heidegger stated in *The question concerning technology*, “*téchne* is not the only one name of craftsmanship and relative skill, but also of superior art and fine arts. *La téchne* belongs to the production, to the *pòiesis*, it is something poietic” (2017, p. 38), thus the technique – and the applied technology of the society of the present and of the future – assumes the value of a probe that has the task of unveiling one’s being.

If a person is called to interact constantly with digital and artificial tools, the latter reveal the double nature of the person: on the one hand, they play the role of creator, a demiurge of a new anthropomorphic structure, created in his image and likeness, a manifestation of a will to power of dominion towards his own creation; on the opposite side, it is transformed into an object of ontological research, since interaction with artificial intelligence can assist it in the research and in-depth examination of its nature. The digital instrument is an element of modification, of knowing that which interacts and changes nature to the advantage of one's being, since a human being is not a purely natural but a profoundly technological entity; the digital instrument is an extension, a prosthesis, an exosomatic organism, able to give intelligibility and interactivity to every element of the environment. In this vision is contained the nature of the technical being and the medium which, from a simple tool, becomes the body's prosthesis that feeds on its own ability to reason, reflect, observe and, therefore, to give life to the infinite technical possibilities of creation. Therefore, "new technologies cause a boundless growth in the power of man, who has become a subject but also the object of his own techniques" (Russ, 1997, p. 10).

Applied technology is becoming a new universe and raises questions that may fill the ethical and ideological vacuum, structuring itself around new principles and new structures: the digital means, designed by the individual, in turn, when they are used, give new form to their own creator, giving new forms to collectivity, convocation, interlocutors, society and the explosion of knowledge. Applied technology, in breaking the anthropocentric vision, molecularises it, and puts forward a cosmocentric point of view, having a previously unknown but necessary normative order, since

no society can survive without a moral code based on values understood, accepted and respected by the majority of its members . . . [In a society of artificialisation] we no longer have anything like that. Will modern societies continue indefinitely to master and control the enormous powers that science has given them with the criterion of a vague humanism tinged with a sort of optimistic and materialistic hedonism? (Monod, 1990, p. 93).

Although this question places an ethical void before humanity, it is a space that is ready to mould itself according to human will – as Sartrean existentialism already affirmed in the last century – bearing in itself the gift

of maieutics, of realisation, of production. It is a place where there is an influx of information, data, expectations and capillary connections, which need a value-based examination that can allow a human being to unravel the uncertain: although the future is definitely moving at a greater speed than human progress, what is required of people is to understand whether the direction taken is correct according to the principles of responsibility and cooperation for the structuring of a society founded on a collective intelligence, “constantly enhanced, coordinated in real time, which reaches an effective mobilization of skills” (Lévy, 2002, p. 248): this is one of the fundamental contributions that artificial intelligence can give to a human being, that is, not to become a thinking machine, but assisting a person in making choices, doing so in a way as quickly as possible and as correctly as possible.

A machine becomes a positive prosthesis of the person that amplifies its qualities – becoming the horse (or the driverless car), one which is hyper-fast, with which one can reach apparently distant horizons – but without depriving it of its poetic ability: although machines are able to respond more quickly than a person, only the person is still granted the gift of knowing how to ask new questions and to investigate them through the utopia.

Living in the *technium*, that place that is built not only “in hardware and [in] machines, [but also includes] culture, art, social institutions and intellectual creations of all kinds [and, with them] the software, laws, philosophical concepts” (Kelly, 2011, p. 14), human beings should understand that technological evolution – at the current historical point – is dependent on the actions of people, their inventors and researchers: thus, we must not be “scared” of the revolt of the machines, but look for an approach that can morally indicate the elimination of what enslaves one from what frees and develops, given the openness towards unexpected decisional spaces that imply the physical and metaphysical implementation of innovative processes for the evolution of society.

A new symbiotic relationship between applied technology and humanism is established to give a machine the positive aspects of human knowledge, which may be improved thanks to the technology of its instruments, trying not to let artificial intelligence know the defects that often stain ethics and human morals.

The primary task of an ethical principle that contemplates the human-machine relationship is to understand the structuring of these new

systems, without making them objects. Otherwise, this would end up emptying them of their potential, thus trying to recompose the current fracture it has created between humanism and technology, redefining the complex relationship that contemplates nature and technology, since, as already asserted, a human being is a more technical and natural entity. It is necessary to educate one with knowledge of a device, of the repercussions – those positive and negative that any tool with an ethical aspect brings with it and can have on the physical and mental functions of the person. This should include the potentialities and unpredictability of a machine, skills and knowing how to communicate, up to the conception of the tangibility of the real and the indeterminacy of the possible, in a social and academic context that is called to the interconnection of knowledge in order to face a market – be it an economic, political, cultural or employment market – dedicated to materialism that must be arrested, because, as Weber stated in 1905, “when the market is abandoned to its self-normative nature, it knows only the dignity of the thing and not of the person, not duties of brotherhood and pity, not original human relations of which the personal communities are carriers” (1968, p. 620).

In 2015, Roberto Zicari and Andrej Zwitter initiated the Data for Humanity project, contemplating five ethical principles for the use of digital data and their application in the development of tools that can manipulate them, decreeing that they should:

do no harm; use data to help create peaceful coexistence; use data to help vulnerable people and people in need; use data to preserve and improve [the] natural environment; use data to help create a fair world without discrimination (Data for Humanity, n.d.).

These are principles that contain the will to use information, the real power of contemporaneity, for the community and for its well-being, with the aim of fighting the great challenges of humanity and the planet.

In February 2017, the Future of Life Institute issued the Asilomar Principles, namely 23 guiding principles for the ethical, safe and collaborative development of artificial intelligence. Among the most important elements, we can highlight the concepts of: safety (AI systems should be safe and secure in their operational lifetime, and verifiably so where applicable and feasible; human responsibility for their use, misuse and actions and their ability to shape those implications); values (human systems should be

designed and operated with human dignity, rights, freedoms, and cultural diversity); objectives (these guidelines cover three groups: Research Issues, Ethics and Values, and Longer-term Issues) concerning privacy, security, up to the control of weapons and the moral, ethical and value principles that the relationship between person and machine will investigate in this mutual sharing of space and time.

In the European context, the British Standards Institution (BSI) drafted, in December 2016, a new guide for the ethical design and application of robotic systems in *Robots and robotic devices. Guide to the ethical design and application of robots and robotic systems*, stating: that AI must not be carried out to harm a person; that it is necessary to identify the person responsible for the behaviour of an AI; that to each AI one has its programmers; that it is essential to establish principles of responsibility, equality, cohabitation and ethical learning.

During a session of the European Parliament, in January 2017, the report of the Commission on Civil Law Rules on Robotics was presented, a hypothetical legislative instrument for the ethical and juridical regulation of AI, establishing some elements related to the relationship between maker and machine, looking for a connection with Asimov's three laws of robotics. Among the elements of innovation were: the need for a robot registration process; a moral structure and a guide for robot builders; the creation of a European robotics agency; the identification of AI and robots.

From ontological uniformity, from anthropocentric illusion, from a rational demiurge, a person must understand that their role is that of *homo poieticus*: one who questions knowledge and places the community at the centre of their attention, as an object to be taken care of.

Artificial intelligence allows one to increase the opportunities for shared visions, to know and to give thought to its positive unpredictability, since artificial "thought" decomposes our world into a multiplicity of parallel dimensions that – as a digital instrument now finding its way into the hands of the person without instruction book – need a manual in order to understand how to put the different discoveries together. Thus, it is necessary to work on a humanistic project that centres its value on the statement that it is not the tool that is the problem and that if a person plays the social role of employee-object-slave is because they have chosen this position. The human project must act "in such a way that the consequences [of its actions] are compatible with the survival of an authentic human life on earth" (Jonas, 1990, p. 16), partly accepting its dematerialisation.

This does not indicate the transposition of the real into the digital, as it would be fictional to hypothesise the termination of tangible society with just one click: being biological and technical bodies enclosed in the same shell, we should always confront ourselves with our physicality, our emotionality, with the capacity to think, to ask, and with a conscience that calls us to obey ethics and morals.

FUTURE PERSPECTIVES OF SHARED VALUES

*My mind is human.
My body is manufactured.
I'm the first of my kind, but I won't be the last.
We cling to memories as if they define us.
But what we do defines us.
My ghost survived to remind the next of us,
that humanity is our virtue.*

(Kusanagi in *Ghost in the Shell*, 2017)

What real and digital space do you want to build for the future of humanity? What kind of ethical and value relationship will be established between people and machines? Are human beings ready and aware of their role and able to accept a cosmocentric vision of society?

Real and digital, natural and artificial, belong to categories that seem, deliberately, to create clashes of ideologies between different groups of belonging – apocalyptic and integrated among others – that will be increasingly difficult to eradicate from the individual's conscience. The centrality of technology in everyday life has become an immanent element of theoretical and moral reflection that must lead to the vision not of battles, but of possibilities of salvation for the person, since artificial intelligence can suggest spaces for investigating the nature of humanity that alone, as a race, would never be investigated. We must conceive the plurality of these intelligences, using the noun in its plural form, as according to the agents, environments, individuals and experiences with which they interact or register, they will have a different formation and, moreover, they will be able to enrich themselves in the machine-to-machine dialogue; this would contribute to adding to a hypothetical evolutionary chain, not of being, but of the cosmos, a missing link having in itself the task of unveiling further ends in reality not contemplated until now.

Artificial intelligence can become an instrument in the fight against poverty, climate change, violence, the disparity of resources among people, revealing itself to be the greatest ally of humanity and the history of civilisation, succeeding in placing an individual on the periphery of social discourse, but only to enable them to grasp the uniqueness of their nature and make them, again, a curator of their environment; to unhinge the binomial capitalism-consumerism, in favour of a human capitalism, of a flourishing and shared economy that breaks down the stereotype of the image, of the simulacrum, in favour of an ecology of the market; allowing knowledge to progress faster, but in a correct, ethically sustainable way and free of space-time limits. Finally, artificial intelligence could be another factor that investigates the nature of humanity, reconciling it with the principles of responsibility, justice and cooperation.

BIBLIOGRAPHY

- Adrizzo, G. (2003). *Governare l'innovazione. La responsabilità etica*. Soveria Mannelli: Rubbettino.
- Bateson, G. (1977). *Verso un'ecologia della mente*. Milano: Adelphi.
- Baudrillard, J. (1999). *Cyberfilosofie. Fantascienza, antropologia e nuove tecnologie*. Milano: Mimesis.
- Beck, U. (2000). *La società del rischio*. Roma: Carocci Editore (ed. orig. *Risikogesellschaft*, 1986).
- Bernstein, J. (1990). *Uomini e macchine intelligenti*. Milano: Adelphi.
- Burdick, A. (2012). *Digital Humanities*. Cambridge: MIT Press.
- Caar, N. (2011). *Internet ci rende stupidi?* Milano: Cortina Raffaello.
- Cesareo, V., & Vaccarini, I. (2012). *L'era del narcisismo*. Milano: FrancoAngeli.
- Chaitin, G. (2007). *Alla ricerca di Omega*. Milano: Adelphi.
- Chaitin, G. (2013). *Darwin alla prova*. Torino: Codice edizioni.
- D'Amato, M. (2012). *Finzioni e mondi possibili*. Roma: LibreriaUniversitaria.
- Data for Humanity: An Open Letter*. (n.d.). Retrieved October 13, 2018, from <http://www.big-data.uni-frankfurt.de/dataforhumanity/>
- Davis, N., & Schwab, K. (2018). *Shaping the Future of the Fourth Industrial Revolution*. London: Penguin Books.
- De Biase, L. (2015). *Homo pluralis*. Torino: Codice edizioni.
- De Kerckhove, D. (2011). *Il sapere digitale*. Napoli: Liguori.
- De Kerckhove, D. (2016). *La rete ci renderà stupidi?* Roma: Castelvecchi.
- Eco, U. (2001). *Apocalittici e integrati*. Milano: Bompiani.
- Floridi, L. (2009). *Infosfera. Etica e filosofia nell'età dell'informazione*. Torino: Giappichelli.
- Floridi, L. (2014). *The Fourth Revolution. How the infosphere is reshaping human reality*. Oxford: Oxford University Press.

- Floridi, L. (2017). *La quarta rivoluzione. Come l'infosfera sta trasformando il mondo*. Milano: Cortina Raffaello.
- Galli, C. (1997). Presentazione. In J. Russ, *L'etica contemporanea* (pp. VII-XI). Bologna: Il Mulino.
- Greenfiels, A. (2017). *Tecnologie radicali*. Torino: Einaudi.
- Han, B. (2014). *Razionalità digitale*. Firenze: goWare.
- Han, B. (2015). *Nello sciame*. Firenze: Nottetempo.
- Heidegger, M. (2017). *La questione della tecnica*. Firenze: goWare.
- Hofstadter, D. (1984). *Gödel, Escher, Bach: un'Eterna Ghirlanda Brillante*. Milano: Adelphi.
- Jonas, H. (1990). *Il principio responsabilità*. Torino: Einaudi.
- Jonas, H. (2011). *Frontiere della vita, frontiere della tecnica*. Bologna: Il Mulino.
- Kagermann, H., Lukas, W., & Wahlster, W. (2011, April 1). Industrie 4.0: Mit dem Internet der Dinge auf dem Weg zur 4. industriellen Revolution. *VDI nachrichten*. 13. Retrieved from http://www.wolfgang-wahlster.de/wordpress/wp-content/uploads/Industrie_4_0_Mit_dem_Internet_der_Dinge_auf_dem_Weg_zur_vierten_industriellen_Revolution_2.pdf
- Kant, I. (1997). *Fondazione della metafisica dei costumi*. Roma-Bari: Laterza.
- Kaplan, J. (2017). *Intelligenza artificiale. Guida al futuro prossimo*. Roma: Luiss University Press.
- Kelly, K. (2011). *Quello che vuole la tecnologia*. Torino: Codice edizioni.
- Lévinas, E. (1984). *Etica e infinito*. Roma: Città Nuova.
- Lévy, P. (2002). *L'intelligenza collettiva. Per un'antropologia del cyberspazio*. Milano: Feltrinelli.
- Longo, G. (2001). *Homo technologicus*. Torino: Mimesis.
- Longo, G., & Vaccaro, A. (2013). *Bit Bang. La nascita della filosofia digitale*. Milano: Apogeo.
- Maldonado, T. (2012). *Reale e virtuale*. Milano: Feltrinelli.
- McCarthy, J., Minsky, M., Rochester, N., & Shannon, C. (2006). A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence. *AI MAGazine*. 27, no. 4, 12-16.
- Minsky, M. (1989). *La società della mente*. Milano: Adelphi.
- Monod, J. (1990). *Per un'etica della conoscenza*. Torino: Bollati Boringhieri.
- Morozov, E. (2014). *Internet non salverà il mondo*. Milano: Mondadori.
- Negroponte, N. (2004). *Essere digitali*. Milano: Sperling&Kupfer.
- Nietzsche, F. (1984). *Genealogia della morale. Uno scritto polemico*. Milano: Adelphi.
- Popper, K. (2000). *Scienza e filosofia*. Torino: Einaudi.
- Popper, K. (2013). *Tecnologia ed etica*. Soveria Mannelli: Rubbettino.
- Putnam, H. (1975). *Mente, linguaggio e realtà*. Milano: Adelphi.
- Putnam, H. (2012). *La filosofia nell'età della scienza*. Bologna: Il Mulino.
- Rawls, J. (2008). *Una teoria della giustizia*. Milano: Feltrinelli.
- Russ, J. (1997). *L'etica contemporanea*. Bologna: Il Mulino.
- Russell, S. (2010). *Intelligenza artificiale. Un approccio moderno*. Milano-Torino: Pearson.
- Sanders, R. (Director). (2017). *Ghost in the Shell* [movie].
- Schmitt, C. (2008). *La tirannia dei valori*. Milano: Adelphi.
- Searle, J. (1998). *Il Mistero della Coscienza*. Milano: Raffaele Cortina Edizioni.
- Sini, C. (2009). *L'uomo, la macchina, l'automa: lavoro e conoscenza tra futuro prossimo e passato remoto*. Torino: Bollati Boringhieri.
- Somezi, V., & Cordeschi, R. (1994). *La filosofia degli automi. Origini dell'intelligenza artificiale*. Torino: Bollati Boringhieri.

- Touraine, A. (2012). *Dopo la crisi. Una nuova società possibile*. Roma: Armando Editore.
- Turing, A.M. (1950). Computing Machinery and Intelligence. *Mind*. 49, 433-460. Retrieved from <https://www.csee.umbc.edu/courses/471/papers/turing.pdf>
- Turkle, S. (2011). *Il disagio della simulazione*. Milano: Ledizioni.
- Weber, M. (1968). *Economia e società*. Milano: Comunità.
- Weber, M. (1991). *L'etica protestante e lo spirito del capitalismo*. Milano: Rizzoli.
- Wittgenstein, L. (1983). *Tractatus logico-philosophicus e Quaderni 1914–1916*. Torino: Einaudi.