

## ON CYBER-ETHICAL CHALLENGES

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**Abstract:** Information is an essential element for the present society development at all the levels: economic, financial, political, cultural, etc. Beyond a lot of advantages, our peculiar status as actors in the information and communication society shows no less a serious problem as regards the risk to removing of human values and heading toward imbalance and chaos. By consequence, the need of ethics becomes more and more a reality. As a delicate issue for the most profound human relationships, ethics stands for our education and action management, offering us guidelines to think, to know and understand, to act by responsibility and mutual respect, too. Ethics gives us a fundamental frame to supporting and protecting the human freedom through a continuous updating the moral values and principles, in the endeavour to deal with both the positive and negative impact of the nowadays cybernetizing process. A plea for the cyber/ethics makes the core of this paper.

**Keywords:** ethics, information, digital communication, cyber/ethics, Internet

The history pages characterizing the end of the second millennium and the beginning of the third are full of profound and rapid changes in all fields due to technological evolution, but mostly because of the development of communication networks. According to Patricia Wallace, “the Internet has been penetrating many aspects of our workplaces and working lives, sometimes quietly, sometimes stormily, but relentlessly nonetheless”<sup>1</sup> and it has become the arena where a great part of human life (with its socio-emotional connotations) takes place; and nobody will make abstraction of it.

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<sup>1</sup> Patricia Wallace (2000). *La Psicologia Internet*. Milan: Editrice Raffaello Cortina, p.1.

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The exponential and unstoppable increase of the Web and of connections caused a modification of lifestyle and of processes of constructing knowledge and life necessities. The seductive emergence of the digital world created an alteration of daily relationships, of the thinking and acting manner in economic exchanges on a global and local scale, in the political and religious world, in the entertainment and recreational expressions, but also in the forms of science knowledge and transmission.<sup>2</sup>

The penetration of the Internet in our life has created an invisible planetary spider web, where not only are we all caught, but we are compelled to remodeling the conceptual categories already consecrated across time by sociological and political tradition, such as identity, background, faith, etc. All of the above entail profound changes in the concrete attitude of the individual and of the society, such as identity fragmentation, existential insecurity, individualism, pragmatism, immigration, low aspirations, and even the radicalization of language. Each sphere of our life comprises a digital revolution, and this process of transformation involves each aspect of our lives, thus transforming it into the fruit of interaction complexity of human needs and technological innovations.<sup>3</sup> The media digitization, including rapid data compression and their transmission at unbelievable speed, led to an almost imperceptible change in lifestyle.

Each of us is an integrant part of this universe, participating inevitably as a spectator or full-right protagonist and having the possibility not only of using information, but also of producing them and sharing them with others. This continuous process is based on the new digital communication model imposed after the emergence of the Internet. It involves the passage from a linear and sequential communicative process (where the emitter is in the centre of the communication system, while the receiver plays the passive role) to a process where the receiver is in the centre of attention (with the possibility of becoming a transmitter or a receiver, in his turn). This phenomenon has led to the creation of a new and unprecedented existential context, where a person's action has a dynamic and active

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<sup>2</sup> Pina Riccieri (2011). *Formazione a portata di click. Comunicazione digitale e santificazione della mente*. Milan: Editrice Paoline, p.13.

<sup>3</sup> *Ibidem*, pp.14-15.

character in the construction of new knowledge and new competences.<sup>4</sup>

Today, information represents an essential source in the evolution of our modern society, which has developed socially, politically, and economically. The energy and polyvalence of the new context focusing on a high variety and content of information – adapted by using information and communications technology – have led towards information society.

The amazing progress of information technology in the recent period had a major impact upon society and upon economy at global level, thus bringing along fundamental changes in the production and distribution processes, concerning the commercial clauses, the labour force occupation degree, but also daily life. Right at the beginning of the new millennium, global economy was in a transit phenomenon, which involved the passage to a new set of norms and rules, from the predominantly industrial society to information society, which set the foundations of what we call the new economy today. In other words, what we are trying to highlight is that information society exists and that it represents a support element for the society of knowledge.

In the current context, we can even discuss a social system within which information disseminates rapidly on very long distances using media networks – referring directly to the Internet –, thus mobilizing in a particular manner the coagulation of certain communities whose identity is structured by information and that relate differently in time and space.

The way information circulates on the Internet with an extraordinary speed makes the relationships of online communities with time and space particular, unprecedented during the pre-digital history of humankind. The idea that we can surpass temporal and spatial frontiers so simply and in an information-rich continuity provokes a new type of approach to cultural and linguistic barriers, in a positive but also in a negative way. Virtual space is favourable to communication, thus providing an overall picture of these cultural-linguistic barriers, which contributes to the historical constitution of identities from both angles.

Everything has transformed; modern technique has introduced actions, objects, and consequences of new dimensions, reason for

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<sup>4</sup> Gianfranco Bettetini e Armando Fumagalli (2002). *Quel che resta dei media. Idee per un'etica della comunicazione*. Milan: Editrice Franco Angeli, pp.20-21.

which the *ambitus* of traditional ethics is not able to measure them. The norms of the ancient ethics of the neighbour – the norms of justice, forgiveness, honesty – are still valid in the sphere of closeness, of daily life, of human intervention. However, this sphere is closed by the increase in the collective one, where the actor, the action, and the effort are no longer the same; due to enormous forces, it imposes upon ethics a new and unprecedented dimension of responsibility.<sup>5</sup>

The way we relate to time seems to be one where we become estranged from our human values and we are prone to imbalance and chaos; regarded from this perspective, people's need for ethics has become ever more stringent. The amazing development of the economic field and the dissemination of new technologies at global level led to the restating of ethical arguments. Insofar as interhuman relationships are increasingly easier to achieve because they exceed the spatial frontiers, ethics has become a delicate issue that cannot and should not be ignored.

We believe ethics is a foundation in the development, education, and organization of the manner of acting, thinking, and being. Hence, we have to find a path founded on qualitative knowledge, on responsible commitment, and skill. Human responsibility and freedom entail a permanent and necessary need of updating our moral values and dogmas, in this world invaded by negative process.

In the past, the concept of *techné* represented an attribute of necessity, not the path leading humanity towards the chosen objective. In exchange, nowadays the *techné* path under its current technological form has turned into an impulse of going forward; mostly, it tends to identify itself with human vocation and, by totally taking over control of things and humans, it appears as an attainment of its goal.<sup>6</sup>

Our contemporary society faces one of the most extraordinary phenomena ever known: electronic informatization. Computers changed totally our lifestyle and they assist us in activities within various fields, as an instrument, as a natural work tool, which derives the latest and the most important revolution known by humankind from the perspective of evolution: information revolution.

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<sup>5</sup> Hans Jonas (1979). *Das Prinzip Verantwortung*. Italian translation: Pier Paolo Portinaro (ed.) (2009): *Il principio responsabilità. Un'etica per la civiltà tecnologica*. Turin: Piccola Biblioteca Einaudi, p.10.

<sup>6</sup> Hans Jonas (1974). *Philosophical Essays: From Ancient Creed to Technological Man*. Italian translation by Giovanna Bettini, Alessandro Dal Lago (ed.) (1991): *Dalla fede antica all'uomo tecnologico*. Turin: Società editrice Il Mulino, p.51.

The extraordinary rhythm of information and communication technology is the result of needs in the fields of industry and research or even of needs to improve media techniques, and of competitive contests in the field of technology, (where political, military or social aspects are added besides purely economic aspects). The contemporary evolution of the information sector is marked by a global phenomenon, namely the “revolution of knowledge”<sup>7</sup> and the spectacular development of information and communication technologies.

Human society has been continuously searching for ways and modalities to guarantee a good adaptation to great technological changes. As new needs and problems emerged and new technical means for solving life necessities were discovered, new institutions were constituted with the main purpose of damping the shocks provoked by the new technologies and of eliminating abuses that may have uncontrollable effects. The application of new technologies has sometimes favoured negative secondary effects even during the process of solving current production issues, of increasing material welfare, of improving health status; solving or minimizing them requires additional efforts and costs.<sup>8</sup>

Any new technology generates new risks and new problems, implicitly, and the institutions with the power of damping the socks provoked by the impact of implementing new technologies are required to solve them. Each computer science professional has information that the public (ICT using customers) either cannot access or do not have the skills to comprehend. Most ICT users may be affected by the working modality of calculus and communications equipments, by the correct functionality of systems, by the ethical behaviour of computer science specialists.<sup>9</sup>

The current achievements in the field of science and of information technology have transformed the Internet into an agora, a place where new ideas, concepts, and technologies are invented, created, and

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<sup>7</sup> Maria Concetta De Vivo e Fausto Marcantoni (2014). “Etica, Informatica e Diritto. Spunti di riflessioni di un giurista e di un informatico”, *Rivista elettronica di Diritto, Economia, Management*, Year 5, Issue 2, pp.130-147.

<sup>8</sup> Carl Mitcham (1987). “Responsibility and Technology: The Expanding Relationship”. In Paul T. Durbin, *Technology and Responsibility*, volume 3, Dordrecht: Springer-Science+Business Media, B.V., p.3.

<sup>9</sup> Paolo Pellegrino (2009). *Etica & Media. Le regole dell’etica nella comunicazione*. Galatina: E Congedo Editore, p.153.

changed, and contacts between totally different people have passed from the stage of possibility to the one of reality.<sup>10</sup>

Most ICT users fail to understand the functioning mechanism of computer systems; hence, they cannot assess correctly their functioning quality and security, which leads to a series of obligations and responsibilities that a part of computer science specialists must assume. Post-moralist society has abandoned writing in golden letters the supreme duties that man and citizen must respect, by proclaiming the greatness of self-abandonment. It does not represent the disappearance of our moral intentions; we may state that we are witnesses of an update of our ethical interests, of a redefinition of moral issues and therapeutics.<sup>11</sup>

“In the multimedia and cybernetic space era,”<sup>12</sup> Ignacio Ramonet posits, the commercial has had an obvious ascension over the educational, with a veritable cultural model. We are witnesses of a global commercialization of words, things, meanings, nature, and culture, bodies and spirits, thus making place to a globalized culture and to certain processes that “mutilate reason and annihilate spirit,”<sup>13</sup> through individualization and uniformization.

The new communication model consolidates the activity of thought, changes the contexts, usages, and methods comprising the understanding, conveying of culture and science: it opens information spaces and it creates new interactions; it leaves place to the freedom of expression, but risks increase exponentially, too. Through the Internet, anyone can access rapidly any piece of information and he/she can even create a personal palimpsest or communication scheme; he/she may express various opinions on different forums and in debates conducted in the virtual space.<sup>14</sup>

Hence, control barriers fall and social influences disappear through the Internet; new frontiers are opened and, in order to access them, one

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<sup>10</sup> Ștefan Iancu (2005). “Impactul social al utilizării tehnologiei informației și comunicațiilor” [“The Social Impact of Using the Information and Communication Technology”], *Revista Română de Sociologie*, New Series, Year XVI, Issues 5–6, pp.449–468.

<sup>11</sup> Gilles Lipovetsky (1992). *Le Crépuscule du devoir*. Romanian translation by Victor-Dinu Vlădulescu (1996): *Amurgul datoriei*, Bucharest: Babel, p.233.

<sup>12</sup> Ignacio Ramonet (1997). *Géopolitique du chaos*. Romanian translation (1998): *Geopolitica haosului*. Bucharest: Doina, p.144.

<sup>13</sup> *Ibidem*, p.152.

<sup>14</sup> *Ibidem*.

requires a language adjusted to the contemporary period, culture, and sensibility.

Besides bioethics and the other branches of special or applied ethics, a very important space in contemporary philosophical discussions is occupied by the ethical turn brought by the information and communication sector.

The subtle infiltration of digital technology in daily life, developed exponentially since the 80s, has contributed decisively to the modification of social, economic, and cultural conditions. Information and communications technology provides us with enormous possibilities for development, but it also entails new ethical and social problems, by altering the old ones. For instance, the classic issue of intellectual property, privacy, and security; the theft and illegal manipulation of software, the hacking phenomenon; the computer virus; the social and cultural discrimination; the issues related to conservation, distribution, quality control, credibility, and free circulation of information. All of the above and many other problems are closely connected to ethics and to computer-related instruments, according to the words of Norbert Wiener as early as 1950, in his book *The Human Use of Human Beings. Cybernetics and Society*.<sup>15</sup>

Computer science ethics or information ethics is the ethical theory sector according to which the best way to understand and solve the ethical problem raised by information and communications technology (ICT) it is to adopt an environmental approach, through which problems are inserted into the new ecological environment: infosphere.<sup>16</sup> In this context, *infosphere* means the level comprising the artificial layer constituted by information technology surrounding the planet. This is represented by the Internet, by network; furthermore, practically the hard drive, the software, the computer, the networks, the router, which altogether make up the precious shell interconnecting us all, from any point of the planet.<sup>17</sup>

The seeds of the information revolution were planted in late nineteenth century and early twentieth century through the relative scientific discoveries and technological developments of

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<sup>15</sup> Norbert Wiener (1950). *The Human Use of Human Beings: Cybernetics and Society*. Boston: H. Mifflin.

<sup>16</sup> Luciano Floridi (2009). *Infosfera. Etica e filosofia nell'età dell'informazione*. Turin: G. Giappichelli Editore, p.39.

<sup>17</sup> Norberto Patrignani (2009). "Computer Ethics. Un quadro concettuale", *Mondo digitale*. Issue 3, September.

electromagnetic radiations, of the telegraph, the telephone, and the radio. At the same time, we can also discuss the development – even simultaneous – of the science of cybernetics, of information theory, of electronic computer, around the year 1945. It was also the moment when information revolution emerged and started growing exponentially. The man of science and the philosopher Norbert Wiener was the initiator of cybernetics, one of the first participants in the inventing of electronic computers and one of the main people responsible for the development of information theory.<sup>18</sup>

During the Second World War, Wiener and his collaborators accepted the challenge of designing a shield against air raids. This new device had to be designed in such a way as to detect the plane, to determine its position and speed, to predict where it would be in a couple of seconds, to decide where to strike it and, finally, to have it taken down. All of these had to be accomplished simultaneously and without human intervention. Wiener and his collaborators decided to use the radar in order to outline the trajectory of the planes and they invented the electronic computers for decision making. While working on the project, Wiener concluded that the new science developed by him and by his collaborators, – which he would later call cybernetics – and the canon they designed was very similar to the human being or to intelligent animals. In this respect, for instance, the canon had “eyes” (the radar), to collect data on the plane, “nerves” (connections), to determine the internal connections between the components, and a “brain” (the computer), to coordinate the parts, to make decisions, and to fulfill them. Hence, after the war, Wiener said, such cybernetic machines would be controlled by electronic computers and created for different economic, military, and social purposes. He also predicted an “era of automatism” or a “second industrial revolution” with serious consequences from a social and ethical perspective.<sup>19</sup>

Actually, the computer brought a new revolution in the living style.

The computer is at the core of this change in perspective: a technology that infiltrated in the society and that imposes a new and even revolutionary cultural logic.

ICT comprises devices that entail radical transformations, because it represents the environment that a user may enter using an access gate, by experiencing some kind of an initiation. The proper term for this

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<sup>18</sup> Luciano Floridi, *op.cit.*, p.6.

<sup>19</sup> *Ibidem*, pp.6-7.



new radical form of construction is *re-ontologization*, which not only refers to reconfiguring, constructing, or structuring a system, a society in a new way, but also comprises a fundamental transformation of the intrinsic nature, (the one of ontology). In this respect, ICT does not reconstruct, but it re-ontologizes this world.<sup>20</sup>

In this respect, we assist to a change in habitat, to the redefinition of a vital space for man, which also includes machines and their capacity of calculation, response, and dialogue. A sphere called “infosphere” is defined by the fact that the digital disseminates in the analogical and even identifies with it. This recent phenomenon is defined in terms of calculus ubiquity, intelligent ambient, things of the Internet, or *web-augmented things*.<sup>21</sup>

The Internet is very efficient and revolutionary, though originally it was just a rather mundane idea: of creating a connection between different computers and of introducing them into a connected network system. This creates the structure of the Internet and of World Wide Web or simply web – the language initially created by Tim Berners-Lee, which allows the computer’s memory to interact and navigate between *libraries* and *data* within a much broader memory, thus creating a *hypertext* made of knots, the so-called *links*. The network becomes the place of not only research, but also changes: the user becomes a protagonist by posting, commenting, manipulating, and altering. An obvious element is the specific character of connected media-digitization because they require interactivity: “Working on a computer - Kerckhove underscores – involves the entire mental collaboration in terms of texts, images, our sounds. Interactivity is a condition, not an option. Participating, sharing, interacting are key and basic words, thus assuming the emblematic role of this new web that dominates the cultural processes.”<sup>22</sup>

We often discuss *fandom* and *grassroot*, namely a new force and a new value provided by the users who can introduce their own content and even construct their own palimpsest using the motto of the Youtube channel: “Broadcast yourself.” YouTube, Facebook, Twitter, and other social platforms open a profound network of exchanges, new entries, and mainly they broaden the network. More recently, we have started discussing about *peer*, meaning *peer-to-peer* and *crowd*,

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<sup>20</sup> *Ibidem*, p.21.

<sup>21</sup> Simone Arcagni (2016). *Visioni digitali. Video, web e nuove tecnologie*. Turin: Giulio Einaudi Editore, p.4.

<sup>22</sup> Derrick De Kerckhove (2010). *La menteacresciuta*. Milan: Ebook, p.19.

meaning a culture of participation. *Crowdfunding* is a collective micro-funding system organized on specific platforms: a project is proposed and actual collaboration is required for accomplishing it.<sup>23</sup>

The *mobile* has also taken a step forward; this is another connecting system, characterized by a much more efficient logic of the applications than the classic search engine. Hence, the world has become more and more connected; people may access information far easier and they can communicate in a significantly more effective way. This new dimension of *pervasive computing* and *ubiquitous computing* is illustrated by smartphones, tablets, and phablets, which support the new *wireless* technology, the *cloud*, and the broadband.<sup>24</sup>

Information is all around us and access to it has become ever simpler; we have new, greater, and more viable access ways, closer to our body: *wearable devices* (bracelets, wristwatches, glasses, and even contacts), genuine connecting devices that are easy to wear; interaction with them is simple, natural, using gestures and the voice. These *devices* – through a microchip, antennas, and sensors – turn into a connected computer: the Internet exits and colonizes the world. This phenomenon is also called the Internet of things or the Internet of items.

Information is in the environment, in space. Each object, each building and person can virtually become a network terminal.

Computer science revolution is the phenomenon with the greatest contribution to the restoration of global economy. By creating interconnections capable of relating all people and all companies using just one means of communication, namely the Internet, purchasers and sellers may demand information, assess, and buy remotely. For most companies, a great problem is that many of the managers at the top of the pyramid were born during the industrial revolution but they run the companies during the digital revolution. Beyond this issue, the digital revolution opened new frontiers for information, which contributed to the intensification of turbulence and chaos.

In this respect, the Internet has transformed and globalized commerce by creating new modalities for purchasers and sellers to conduct the transactions, to manage the acquisition flow. In addition, those looking for a job can contact employers easier. The new means of communication – text messaging, websites, chat, blog sites – form a

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<sup>23</sup> Simone Arcagni, *op. cit.*, p.5.

<sup>24</sup> *Ibidem.* p.6.

global system that facilitates the individuals' work through information exchanges and collaboration.

A new technology – ICT included – must be compared to its alternatives; it also requires an analysis of risks and benefits entailed by these new technologies. In general, technological progress has been a major factor in generating welfare, freedom of action, and evolution opportunities for many people, in order to obtain higher living standards. This does not mean that ICT – this relatively new wonder-technology – features only favourable lights; on the contrary, there are certain obscure shadows, too. However, it is necessary to study all new technologies and to point out their negative aspects in order to minimize or eliminate them and to identify the positive aspects in order to value them.

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