PEOPLE, IOT SENSORS, EDUCATION, INTERNET AND ARTIFICIAL INTELLIGENCE: THE KEY ROLE OF THE PERSON

PERSONE, SENSORI IOT, EDUCAZIONE, INTERNET E INTELLIGENZA ARTIFICIALE: IL RUOLO CHIAVE DELLA PERSONA

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ABSTRACT

We are living in the age of the wide internet network in which we first connected the contents, then people and now the objects. Today, objects and people are constantly entering data into the large network. This is marking two new interest-ing lines of research: (a) turning "big data" into increasingly useful information; (b) ensuring a "secure" network to protect "sensitive" data. Both lines of re-search, however, seem to forget a key aspect in this increasingly "unstable" world: the position of the person. Any "secure" computer system and any crea-tion act required to transform data into information, in fact, will always be car-ried out by people. Therefore, the question we are asking ourselves in this short study is: Is the new focus of the stain and network system the centrality of a person?

Viviamo nell'era dell'ampia rete internet in cui colleghiamo prima i contenuti, poi le persone e ora gli oggetti. Oggi oggetti e persone immettono costantemente dati nella grande rete. Ciò segna due nuove interessanti linee di ricerca: (a) trasformare i "big data" in informazioni sempre più utili; (b) garantire una rete "sicura" per proteggere i dati "sensibili". Entrambi i filoni di ricerca, però, sembrano dimenticare un aspetto fondamentale in questo mondo sempre più "instabile": la posizione della persona. Qualsiasi sistema informatico "sicuro" e qualsiasi atto creativo necessario a trasformare dati in informazioni, infatti, sarà sempre compiuto da persone. Pertanto, la domanda che ci poniamo in questo breve approfondimento è: il nuovo focus del sistema macchia e rete è la centralità della persona?

KEYWORDS
Person; Personalism; Cyber security (IT security); Education, Internet Of Things (IoT); Big Data
Persona; Personalismo; Sicurezza informatica (sicurezza informatica); Istruzione, Internet delle cose (IoT); Grandi dati.

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Introduction

If the last century was characterized by the industrial revolution, today we are observing the aftermath of what is now well known as the "digital revolution": a complex flow of relationships and "digital" data simultaneously and continuous-ly conveyed.

Regarding the transformation of society in the post-digital era, Zygmunt Bau-man introduced some key aspects which led to several lines of research on the theme of "liquid society" [1].

The development of digitization has brought about a series of cultural, eco-nomic and especially social changes. The digital revolution, which continuously transforms the traditional means of communication to create new ones, has con-tributed to radically change the concept of communication itself.

The digitalization of information is no longer just a new theoretical approach, but it can be actually found in all areas of social life and relations: from school to work environments, from interpersonal relationships to those between the State and the citizens.

As a result of the development of interactive devices (smartphones and tab-lets), there has been an exponential proliferation of channels for the access and dissemination of information. The digital revolution has thus changed the ap-proach and methods of traditional communication. The Internet of Things (IOT) has been added to this, i.e. objects equipped with sensors that continuously transmit data on line. The location of your smartphone is constantly followed up, the images taken by your smartphone are linked to the geographical location, as well as maps are related to mobile phones to determine real-time traffic. Your home cameras can be accessed online from your mobile phone, as well as other devices can be remotely activated/deactivated, etc.

In other words, knowledge, cultures, actions and human relations define a new digital reality, complex and fast, whose constituent elements, people and objects, interact with each other, without spatial or temporal limits. We are all “net-worked”, a sort of "sensory" objects and people, each one subordinates the other and is conditioned in turn.

In this complex and fast age, the person, like an "open system", loses his/her well-defined "boundary" and becomes a "complex system" of a higher order, no longer

described by "his/her" sub-systems, but by so many subsystems of his/her own and not, as an effect of relations between people mutually coupled in a net-work and "intelligent" objects. In this new complexity, any minor disruption oc-curring within one of these "sub-systems", even if not of their own, causes a change in other "sub-systems", own or not, changing the whole system as a whole.

A simplified paradigm of what has been described could be that of a group of people who travel by car with their smartphones. The smartphone, unbeknownst to those who use it, continuously transmits data on its position to a software link-ing the geographical position to road maps to calculate the traffic in real time, thus orienting other people's navigators and suggesting alternative ways to avoid congestion. Moreover, this "big data" could then be used to get "information" such as how many people in a day, month or year pass along that road, or how many times the same person takes that road in a week, etc.

2 A new form of illiteracy

Today our existence is so imbued with so much knowledge, some of which is freely available to everyone, that the real problem in accessing knowledge be-comes that of "critical selection". The excess of data and information, caused by the digital revolution, can become "noise" which hides the signal. If there is too much noise on the channel, the signal no longer reaches the receiver, the so-called "signal-to-noise ratio" collapses. This "noise" has serious implications on the users to whom a message is addressed, because they are no longer able to achieve the information content (message). The receiver is no longer able to ac-cess "true" information or knowledge, and he/she - indeed - feels discriminated against from a social, political and cultural point of view. That is to say, we are witnessing a new form of illiteracy [2]. As in the past, "not being able to read and write" created discrimination of all sorts, today it is the lack of ability in selecting information that causes social inequality.

George Boole, British Mathematician and Logician, considered the founder of binary logic, and whose insights have given rise to an important step towards the conception of the modern computer, defines computation as a set of symbols mixed together [3]; the combination of these symbols gives a result, which is comparable to non-human communication. In other words, if we exclude the pragmatic of human communication, syntax and semantics are expressed by combining symbols. From this point of view, there is no significant difference between calculation and communication.

Since there is no difference between calculation and communication in this purely simplified aspect, we can carry out a process of abstraction and assert that we have recently witnessed two different phases which have followed one anoth-er over the years. In verbal languages, redundancy is the use of words whose omission does not constitute a substantial loss of meaning. At first, it was the "information redundancy" that created an excess of information. At this stage, the "educational" media (both on radio and television) often used a "filter" when passing information, which ensured that the information content itself was not disseminated in an excessive way, to avoid "information redundancy"; in this way, an unnecessary overabundance in favour of a wider and more educational information spectrum was avoided.

Later on, the filtering of "good" media failed and as the Internet came up, the excess of information ceased to be simple "redundancy" and became something much more complex and non-linear. In this way, a sort of "disorienting" chaos has been created within an already complex system.

In such cases, and the Internet shows it, people warn of this communication defect and react, becoming an active part (each one creates his/her blog, his/her Facebook profile etc.). The community's activism brings a greater complexity with it (as in a sort of "avalanche effect"), making communication become hyper-trophic and, consequently, inducing the need for new tools to "decode" infor-mation in a new and modern systemic vision. Then, to all this, we must add the data and above all the information that the "sensory" objects connected to the Internet are putting on the net.

3 **Scenarios and possible solutions**

Communication also means weaving relationships in terms of pragmatic human communication between individuals in a group. As an example, there is a very significant paradigm used by the school of Palo Alto [4]: "Within a wood, at a certain time of the year, the cyclical extinction of a particular species of foxes occurred. In other periods of the year, however, foxes were in excess and there was the opposite problem. This phenomenon, apparently "strange" or particular, in reality, was due to the fact that these foxes used to feed only on a very particular species of rabbits. So, once it was observed that this species of rabbits had an opposite demographic trend, the solution to the "strange" phenomenon suddenly became obvious!".

In the post-digital era, a new form of "relationship" between people and between people and "intelligent" objects has emerged, due to the complexity of the system

we are immersed in. We are all close to each other, in time and space. The speed and proximity of relations determine that there is no longer a group and therefore its delegate. Suddenly, group psychology is no longer able to describe the "combinatory" phenomenon among men. There are so many people coming into contact with each other and, within this complex and fast system, they are strongly linked to each other. So, if the Theory of Systems paradigm is to be used, we have moved from the "Person System" to the "Mutually coupled People System", with other people and with "intelligent" objects.

Before the post-digital era, in fact, the "School of Palo Alto" had described the personality of an individual as a complex System made up of many subsystems. It follows that a disturbance in one of its subsystems may affect another subsystem, e.g. a change in the affective subsystem may cause cognitive disturbance and vice versa [4].

Today, on the other hand, we have before us a new and more complex "Personnel System", where every little disturbance occurring within a single person (every little change in an individual's personality subsystem), or a change in data provided by an object connected to the Great Internet, causes a disturbance within other people who are - indirectly or directly - closely connected to the Internet.

Digitization has pushed the anthropological mutation of man far beyond the predictable: the technological leap has involuntarily made us all close together, in time and space, also determining a new and complex centrality of the person. Suddenly, in the fast and complex era, post "liquid society" [1], we have all become close, carried by unceasingly violent Brownian movements, whose "wake" asks to be investigated, if we wish the protection of the human species. In fact, for the Human Sciences, reality is no longer describable, nor can we estimate what will happen.

Every person, considered in his/her specificity and uniqueness, is able to influence the present state of affairs, indeed his/her contribution becomes essential [5]. Today, a single person with a banal computer virus can put the entire planetary air traffic system into crisis, creating a catastrophe, just as he/she can publish on the net "intimate" images collected or stolen from a camera hidden in any object connected to the Internet, ruining a "normal" person or of a Head of State’s life. Each one of us is tied by a thread of reciprocity to the other, to many others, people and "intelligent" objects, and concurs with them to draw a new state of

things, a new human species in which everyone involuntarily contributes to the custody of the other's life [6].

In this changed relational reality, the search for possible solutions to avoid a disaster is urgent.

It is in this "post-digital" context that Philosophy becomes necessary, especially in information engineering and more generally in the so-called "hard sciences".

A change is also necessary in the educational action, since the main component of every formative intervention is the person, the educating subject, who must be considered an active part in the educational process and not a passive recipient of an intervention. Interesting observations on the subject and possible solutions were provided in literature by Varriale [7].

Without the required adaptation of educational processes and without a deep and conscious philosophical slant, the human species is in danger of extinction. According to the theory of the groups, in fact, the computational laws applying to the single elements within the group cannot apply to the entire group/species: if there is the law of survival within the individual, which instinctively triggers, this characteristic, which belongs to every element of the group, is not a characteristic of the human species. It is true that each one of us has this innate instinct of survival, but it is equally true that the whole human species does not have this instinct.

We must generate "cognitive tools" capable of "reprogramming" a part of our DNA [8]. To this aim, from a pedagogical and educational point of view, the "metacognitive" approach should be experimented with more force. It should offer a critical access to the "reading" of the effects produced by the digital age [9,10].

The metacognitive approach makes it possible to focus the attention no longer on information, but on the ways leading to the subject's awareness of the mental processes put in place. The concept of metacognition has two sides: on the one hand it refers to the subject's awareness of his cognitive processes (metacognitive knowledge) and on the other to the control activity exercised on these processes (metacognitive control processes).

An extremely interesting applicative development of cognitive studies concerned the school field. For example, we can imagine that an adult tries to learn English. He/She will certainly encounter greater difficulties than a child approaching an

unknown language, because in his/her mind he/she will think first in Italian, then switch into English. This is the reason why "native speakers" are often preferred for teaching a foreign language, as they are able to eliminate or reduce the mental barriers of the Italian language, directly entering into the English dimension. However, an adult who will be able to benefit from the metacognitive approach, will know the dynamics inside his brain and will study them in a critical way, entering a new self-training dimension.

The use of Metacognitive and Philosophical didactic methodologies, in any disciplinary field and for any age group, can simplify the structuring of information, its organization and interpretation, promoting reflection on one's own learning strategies and allowing everyone, in their uniqueness and centrality, to monitor and self-regulate their own formative process and their aware actions, in a society where everyone is now "close" and "connected".

4 **Conclusions**

In the post-digital revolution era, in which anthropologically the "Personal System" has profoundly changed, it is necessary to use Philosophy in "hard sciences" and a metacognitive approach in all disciplines of knowledge to "update" the genetic "code" of future generations. Therefore, an operational and continuous transdisciplinary action is needed to safeguard the human species. In other words, it is necessary to quickly understand the difference between "group theory" and "logic type theory": while driving a car, one thing is speeding up and decelerating, something very different is to change gear [11].

School and above all University will have to take up the challenge and promote appropriate initiatives for these new complex and fast scenarios. For this purpose, the use of a metacognitive didactic approach may provide new and pertinent educational tools for future generations [10], in order to prevent the creation of new forms of economic and social discrimination or disasters. New tools and strategies will have to be introduced in the classrooms to adapt teaching and learning approaches to the changing needs of the individual.

The new generations, the so-called "digital natives", are born and grow with information technology, acquire learning, communication and socialization styles, which pose new challenges for the post-digital age trainers: the teaching should no longer focus on the amount of information provided, but on the transmission of new educational models and appropriate "filters", useful on the one hand to separate the "signal" from the "noise" and on the other to understand that any

"safe" computer system will always be conceived by a person and that, more generally, every person can become like a small hole destroying the big dam.

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