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INFORMATION TECHNOLOGY IN THE GLOBAL AGE

Anthropological and Human Rights Implications

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Common Rules for Survival in the Space Age:
Education to Teach Us to Live with Nature as Well as to Master Science and Technology

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Under conditions of ever tougher globalized competition, the development of information technology (IT) has meant a gradual and systematic outsourcing of the typically human functions of perceiving, interpreting and scientifically analyzing reality to automated processes and complex operations often referred to as "artificial intelligence" (AI). Machines – "computers" – are faster, more reliable (in a technical, not moral, sense), and have greater information processing capacity than human brains. The consequences for human beings – as "users" as well as "objects" of IT – are becoming more and more visible. With the increasing "robotization" of daily life, basic human skills – of arithmetic, reading and writing, memory, retrieval and critical analysis of empirical data, etc. – are degrading. Paradoxically, those skills have become even more indispensable under the conditions of technological civilization than in more traditional environments.

Although technical information processing can in no way emulate – not to speak of replacing – human consciousness (*self-reflection*): due to the above-described developments the individual may gradually lose the autonomy of action in his physical and social environment – and, subsequently, also of the interpretation and mastering of the reality he is part of.

Audiovisual technologies, refined and made more powerful by IT, have revolutionized the media – with a pervasive impact on social life and our perception of reality that goes far beyond Neil Postman's prophetic warning in his 1985 bestseller.[1] Instead of learning basic facts about the world in the course of comprehensive humanistic education, rooted in the cultural tradition – the "classics" – of each nation, and comparing and analyzing their unique "life-world" (*Lebenswelt* in the sense of Edmund Husserl's philosophy) to other cultures and civilizations, people – in the modern IT environment – increasingly depend in their understanding of what goes on around them by means of *audiovisual representation*. As Postman brilliantly explained, the categories of "information" and "entertainment" are becoming more and more blurred. For an increasing number of people, "infotainment" has become a surrogate for "education."

In our internet age, the audiovisual transmission of information has had a dramatic and far-reaching impact on *education*. Youth are becoming more and more *naïve*, unable to understand complex historical and social facts and developments, not to speak of the loss of the capacity of *abstract thinking* without which logic, mathematics, or science in general,

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[1] Neil Postman, *Amusing Ourselves to Death: Public Discourse in the Age of Show Business. New Introduction by Andrew Postman*. Penguin Books: London, 2006.

are beyond the reach of the individual.[2] They live "in the moment." This also means degradation of the capacity of *factor analysis* (in terms of understanding the conditions they live in) and, subsequently, *self-critique* – as ability to see oneself from an outside perspective, in the eyes of the other, so to speak (of another life-world, another civilization, another value system). The erosion of basic cultural techniques (such as reading, mathematics, critical analysis of data) results in a dangerous *collective helplessness* in situations where the technical equipment and information transmitting and processing infrastructure may suddenly become unavailable due to social chaos or physical destruction in the course of war or natural catastrophes. Under such conditions, with individuals having lost skills that are vital for survival, society faces the real risk of being pushed back to an earlier (pre-industrial) stage of development. Due to increasing technological *interdependence* – under the complex conditions of IT – at all levels of the economy and societal relations, and in particular when artificial intelligence (AI) comes into play, the dangers from such catastrophic events are dramatically magnified.

Anthropological consequences / implications for education

The application of information technology in the field of communication has also profound *anthropological implications* and a pervasive impact on the construction of social reality. Undoubtedly, the so-called "New Social Media" have meant a multiplication of the individual's possibilities of interaction not imaginable just a little more than a decade ago. They have enabled individuals as well as groups to create networks with global outreach, multiplying each person's capacity to distribute and share his views with society. Marshall MacLuhan's vision of the "global village" has by now become a reality even in the most remote places on earth.[3] Mass mobilization by means of IT has not only empowered the individual to a hitherto unimaginable degree, but also has strengthened the effects of *mass behavior.* What Gustave Le Bon, in his "psychology of the masses," described as "contagion" (in terms of sentiments) and "suggestibility" of the individual in a "psychological crowd," assembled at a specific place and time,[4] may be drastically magnified in the phenomenon of the "virtual crowd." The effects of mass behavior,

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[2] The PISA test results in key industrialized countries in Europe are unmistakable evidence of this. The "Programme for International Student Assessment" (PISA) is a triennial international survey under the auspices of the Organization for Economic Cooperation and Development (OECD).

[3] Marshall McLuhan, *Understanding Media: The extensions of man* (1964). London and New York: Routledge Classics, 2001.

[4] Gustave Le Bon, *The Crowd: A Study of the Popular Mind.* Kitchener: Batoche Books, 2001. (Original French edition: *La psychologie des foules*, 1895.)

enhanced by IT, may make an otherwise stable social system almost ungovernable as the "flash mob" phenomenon in some cities of the industrialized world has demonstrated.[5]

The *educational implications* of this development are also far-reaching. The availability of communication beyond the traditional limits (in space and time) has had a serious effect on the user of those techniques, meaning a drastic reduction of the *attention span* and the loss of the individual's ability to *focus* on a subject (theme, agenda), something that is indispensable for deliberation and analysis. Overwhelmed by the easy availability of communication, almost instantly and anywhere, transcending all boundaries of space and privacy, the individual may easily fall victim to a new form of *isolation* (solitude) in the "infinite space" of the virtual world and risk losing the ability to relate to, and interact with, people in the "real" world. This goes hand in hand with the erosion of family relations and social integration in general.

Trivialization of the public sphere is another consequence of "instant" communication, which enables the individual to transmit his views, perceptions, positions to a global audience *immediately*, and without any checks and balances. Inversely, each individual, as originator of a message, is the potential target of messages, views and positions of all the other members of the virtual community. The user may be overwhelmed by the speed and volume of this never-ending "interactive" flow of information and, subsequently, become a less attentive, and less competent, member of society than under conditions of traditional communication. This may also have a serious impact on the quality of *democracy*, which requires a *mature* civil society where the individual is able to *focus* on a theme, to carefully *deliberate*, and to *set priorities* in a precise and systematic manner.

Digital media has further accelerated the process of *globalization*, bringing different life-worlds and value systems in direct, almost constant contact. It has empowered individuals, enabling them to circumvent "officialdom," access alternative information, and propagate their own views and positions in an *interactive* way, transcending all borders of states and civilizations (cultures). However, the advantages in terms of social and democratic empowerment have to be measured against the risks of *disinformation*, *stereotyping* (of a magnitude not imaginable in the pre-digital world) and, in general, *trivialization* of communication. The "New Social Media" has not only empowered *individuals* (as citizens), but also *those who rule over them*. It has become a formidable tool

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[5] For details see Hans Köchler, "The New Social Media and the Changing Nature of Communication: Anthropological and Political Implications," in: *News and Views: The Journal of the International Academy for Philosophy (New Series)*, Vol. 4, No. 2-3 (32-33) (2012), pp. 42-64.

in the hands of governmental actors and international organizations, whether governmental or non-governmental. This relates, first and foremost, to a new form of public relations that gives political leaders direct and immediate access to the electorate, allowing them to circumvent the mainstream media. It remains to be seen whether a tool of *emancipation* at the disposal of the citizen – as which the digitally enhanced social media were initially described – will be responsibly used by the holders of power – or whether it is not all too often exploited for purposes of propaganda or population control.

Impact of "artificial intelligence"

The development of information technology in the direction of "artificial intelligence" (AI) further aggravates the problem. In order to avoid misunderstandings and not to raise expectations that cannot be fulfilled, it must be made clear, however, that IT-based operations, and their robotic applications, can only produce so-called "intelligence." If intelligence means the human capacity to critically reflect and evaluate a situation, including the capacity of *self-reflection* (self-consciousness or *Selbstbewußtsein*, as explained in the philosophy of Immanuel Kant and German Idealism), this quality of the mind can never be emulated, or created, by the computation of data as efficient, fast and precise as this process may be. Storage capacity, speed of calculations, etc., even if far surpassing human capacity, never produce *consciousness*. IT, and its application in the form of AI, is a tool in terms of improving the skills we identify as technical (practical) intelligence, but it cannot replace human thinking in the sense of *Vernunft* (wisdom, based on self-reflection). It would be a fatal miscalculation should one think that this quality – that defines the human being as such and is the foundation of human dignity and human rights – could ever be outsourced to robotic operations.

The systematic replacement of traditional brain functions – in terms of technical skills – by so-called artificial intelligence will make human beings gradually less autonomous, less capable of the practical mastering of life. In a social and working environment where basic processes of planning and production are more and more "digitally enhanced," or delegated to robotic operations, the intellectual acumen – and entrepreneurial spirit – will unavoidably be weakened. As the physical body needs exercise to avoid atrophy of the muscles, so the brain requires constant challenges and training. Apart from the negative impact in terms of human skills, robotization of industrial production processes, and increasingly also of the service industry, will result in problems of structural unemployment. This can dramatically alter the perception of the role of the individual in society.

Even more serious, in the long term, will be the potential loss of control of society, organized in the form of the sovereign state, over the applications of artificial intelligence, their interaction and synergies, in a way the human being is not able to calculate without using those very tools of AI. This is a *dangerous cycle* that can result in a state of total *dependence*. The warnings of Stephen Hawking and Elon Musk, to name only two of the most prominent critics, must be taken seriously.[6] Independently of these existential risks, inherent in the very nature of AI, there is also a danger of the abuse of information technology, and in particular artificial intelligence, for *totalitarian rule*. In light of the development of IT tools in the last few decades, especially since the advent of the internet, Aldous Huxley's "Brave New World" (1932)[7] and George Orwell's "Nineteen-Eighty Four" (1949)[8] are not dystopian novels anymore.

Human rights implications

In hindsight, the scenarios described in these two novels must be seen as a warning of the potentially adverse consequences of the use of IT for democracy and human dignity. Surveillance – political and commercial – of online behavior has already become a reality of everyday life in many states. This kind of constant electronic monitoring has invited the use of AI for the development of ever more efficient methods of "mind control" – not only for the obvious purposes of marketing, but also in the interest of a totalitarian – or illiberal – state structure.[9] In the laissez-faire environment of modern consumer and fun society, the "users," in most instances, are not aware of their instrumentalization for purposes that go far beyond what is compatible with life in a *free* society, which defines itself as democracy. Consequently, the *right to privacy* is increasingly becoming obsolete. In view of the possibilities, offered by technology, of monitoring and "streamlining" (i.e. manipulating) public opinion, shaping preferences and consumers' choices, the human rights guarantees enshrined, *inter alia*, in the Covenant on Civil and Political Rights only exist on paper.[10] In

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[6] For details see also James Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era*. New York: St. Martin's Press, 2013.

[7] Aldous Huxley, *Brave New World*. New York: Harper Perennial: 2006 (reprint edition). – See also Aldous Huxley, *Brave New World Revisited*. New York, London, Toronto, Sydney: Harper Perennial / Modern Classics, 2006 (first published 1958).

[8] George Orwell, *1984*. New York: Houghton Mifflin Harcourt, 1983 (reprint edition; first published 1949).

[9] The dangers (in terms of the construction of social reality by one absolute authority) are most precisely highlighted in George Orwell's novel "1984" where he lets the representative of the "Party" – meaning the totalitarian authority – say: "We control matter because we control the mind. (…) There is nothing that we could not do." (*Op. cit.*, p. 254) "And since the Party is in full control of all records, and in equally full control of the minds of its members, it follows that the past is whatever the Party chooses to make it." (*Op. cit.*, p. 203)

[10] Adopted by UN General Assembly resolution 2200A (XXI) of 16 December 1966 and entered into force on 23 March 1976.

view of the ease and complexity by which IT has pervaded everyday life, those guarantees have simply become unenforceable. It goes without saying that this state of affairs means a substantial *erosion of democracy* for which freedom of opinion, and the freedom to form one's opinion *independently*, is indispensable. The *General Data Protection Regulation* recently enacted by the European Union[11] is a noble effort, but it is too little too late.

Conclusion: Digital skills vs. digital competence

How to react to the all-encompassing use of IT? How can the individual, as citizen, preserve his autonomy in the face of mass surveillance and manipulation of consumer behavior? These are the challenges in our age of digital technology on the global scale. Mastering the digital skills – in terms of computer literacy and the ability to use the sophisticated tools of IT (whether software, interfaces, or data management systems) will not be enough. What will make the difference is *digital competence* as the ability to understand the *effects* of these techniques on ourselves, our perception of reality and our participation in society. This would be digital skills at the *meta-level*, so to speak, allowing us to understand the mechanisms of data *collection* and c*ontrol*, and, thus, to protect our privacy and preserve our integrity as autonomous citizens, as well as enabling us to take part in public life as equals. Digital competence, in the comprehensive sense, means <u>analysis</u> instead of mere (passive) <u>perception</u>.[12] Only this corresponds to the precepts of human rights that do not allow "objectivization" of the human being – whether by 24/7 monitoring of a person's every move in the digital – and increasingly also, real – world or documentation of individual preferences, making of each and every one of us a "transparent citizen" (*gläserner Bürger*).[13] In a free society, the opposite must be the case. What must be transparent is the state, not the citizen!

Measures against the instrumentalization of human behavior by means of IT should be given priority in any system of education that is oriented towards human dignity. These may include the revival of the (too hastily abandoned) *humanistic* ideals of education in terms of fully reinstating literature, history, and arts – the "humanities" in general – in the

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[11] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC; entered into force on 25 May 2018.

[12] For details see also Hans Köchler, "Digitale Kompetenz: Selbstbestimmtes Handeln in der globalisierten Welt," in: Mike Friedrichsen and Wulf Wersig (eds.), *Digitale Kompetenz: Herausforderungen für Wissenschaft, Wirtschaft, Gesellschaft und Politik*. Berlin: Springer, 2019 (forthcoming).

[13] Cf. the Facebook message of Austrian Chancellor (Prime Minister) Sebastian Kurz, "Gläserner Staat statt gläserner Bürger," 11 February 2013, at https://www.facebook.com/sebastiankurz.at/posts/gl%C3%A4serner-staat-statt-gl%C3%A4serner-b%C3%BCrger-so-lautet-die-botschaft-in-unserem-demokr/122913257888149.

school curricula.[14] Reviving a kind of *studium generale* – which in many places has been abandoned in favor of an almost exclusive focus on "skills," dictated by business interests – could be an effective measure to mitigate the effects of "robotization" on our existence and identity. The increasing outsourcing of brain functions to information technology and, ultimately, to so-called "artificial intelligence," has not only negatively affected our perception of the world, but has resulted in a gradual loss of analytical skills and our capacity of critical thinking. The ease that comes with the application of these technologies in everyday life has further weakened our intellectual curiosity. This *new naiveté* under the auspices of IT is one of the basic challenges of education in our time.

Thus, in this era of globalization, one of the principal tasks of *lifelong learning* will be to ensure – and sustain – the individual's ability to keep pace with the rapid development of information technology. Only *digital competence* in a comprehensive sense – as ability to *understand* and identify the impact of IT on our perception, and construction, of the world – can preserve the autonomy of our action and, ultimately, human dignity.

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[14] Cf. Hans Köchler, "The Humanities in a Globalized World," in: *Beder Journal of Humanities*, Vol. I, Issue 1 (Spring 2013), pp. 6-16.