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Muzeul Viu de la Tecșești

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Despre tehnologiile care consumă omenirea.
Cum vom supraviețui în viitor?

DE FLORIANA JUCAN

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THE FUTURE OF THE WORLD BELONGS TO THE ILLITERATES

by FLORIANA JUCAN, Photo: BOGDAN DINCĂ

I received Professor Mihai Nadin's book "The Civilization of Illiteracy" from Father Mihai Hau, patriarchal counselor and one of the most exquisite intellectuals in the theological field, with the emphatic recommendation that it is the best book he has read in the last 25 years. I can endorse it

with the very same words. I met the author in Bucharest, at the beginning of February and asked him about the direction in which technological evolution is taking us, and about the survival of the "literates" in the illiterate world of tomorrow. Professor Nadin for *Q Magazine*.

What does illiteracy mean for Mihai Nadin?

We are what we do. This pertains to our work, social relations (including family life), leisure activities. In the process of doing what we do—making a scientific discovery, having sex, dancing, cooking, carrying out a terrorist act, helping the needy, etc.—we constitute our own identity. When what we do no longer requires reading and writing, our constitution in language expression—that is, the need for literacy—ceases to be characteristic of the civilization of illiteracy. It is replaced by the need to acquire experience and to transmit it through images, multimedia, and a variety of other means of the expression: animations, [0, 1] (i.e., the Boolean alphabet of 2 letters), and scientific and mathematical formulae. It is a relative illiteracy. I have colleagues in academia who have not read a book for the last 20 years. Some have a level of language expression that would have prevented me from reaching third grade in elementary school. But they are top-notch in their domains. Some are neurosurgeons. Others work in radio astronomy. Some are prominent in genetics. They use specialized languages of extreme precision, but of reduced expressive power, in order to acquire knowledge. Even their reading of specialized journals is limited. A whole slew of assistants select for them what might come close to their particular interests. (Politicians are not different: staff members write for them, polls inform them of the direction of the "wind.")

The illiteracy of PowerPoint presentations is so extreme that the vocabulary of all PowerPoints posted on the World Wide Web is more limited than the vocabulary of a high school graduate of 30 to 40 years ago. In its movies, Hollywood has practiced the dialog of less than 800 words since its establishment. If you want to learn English by watching movies, you will end up with a subset of the language. Many do.

Who are the "illiterates"?

At the low end, the illiteracy rate is extremely high among high school dropouts, the poor, the gamers. The *Financial Times* just reported that executives in Great Britain have problems with their arithmetic. Students are less and less willing to read more then 2 to 3 pages of bibliography. Their ability to write a coherent text (not lifted from the Web, even with its bad grammar) is even lower.

Together with spectacular progress in speech recognition—e.g., Cortana, Siri—the need to read is disappearing. Wikipedia "reads" the text for you. Moreover, if you want to post on Wikipedia, you can dictate. (Nobody will ever know if your writing skills are bad or nonexistent.) But in my view of who the illiterates of our time are, I would add those who have never cooked a meal "from scratch" and know only of soup from the can or the package. Or those who have never entered a family relation, but limited themselves to the convenience of cohabitation. Or, to give another example, those who "programmed" the last wars (including the software programmers of precision bombing) carried out by an illiterate military incapable of even reading the maintenance instructions for their sophisticated weaponry.

As opposed to the time of the civilization of literacy, when to be efficient was possible only on the basis of literate skills, to be efficient today is to constitute yourself in a universe of extremely limited means of expression and communication, but of very high efficiency. We are all illiterate, and the expectations of further increases in efficiency forces us to levels of illiteracy that might affect the cohesion of society.

Taking the principle "We are more connected than ever, but lonelier" as a starting point, are the literates threatened with extinction, with being isolated, withdrawing themselves in a smaller universe?

The risk you refer to is real. At the time when technology either replaces human effort or makes it ever more fragmented, we experience a change in the human condition. Solidarity was never an expression of the idealized condition of people being nice to each other. When people *need* each other, they stick to each other. Given the extreme effectiveness under circumstances of distributed knowledge, decentralized structures of living and of political life, individuals are less and less dependent on one another. In the literate structure of family, dependencies reflected very precisely the structure of language (e.g., the verb was the man, the noun was the woman, etc.). Since we no longer need each other to the extent we did in the past, the family is replaced by a different set of relations: social services, daycare centers, *ad hoc* help groups, for example.

The autarchic individual has no sense of community and no sense of allegiance to anything. Even the rule of law, not to mention religion-based rules, is forfeited. The illusion is of independence. But the reality is levels of dependency rather similar to addictions. Think about youngsters who stand in line 3 days and nights for the latest gadget, to be bought on credit (usually not their own), which will be discarded at some time that is shorter than the time it took to get their hands on it. They don't consume. *They are consumed.*

If today we generate in a minute more information than in the whole history of humankind, is ALL this information really useful? How do you explain the paradox of the production of information in direct proportion with an ever more illiterate world?

To be clear: we are producing more data, not more information. Your question caught an error made by almost everyone who brings up the information age. (I made it myself.) *Only data associated with meaning is information.* To state how many trillions of dollars are transacted in the stock market is to provide data. To associate that amount with a meaning—e.g., to find out how much money is invested in long-term assets—is information. It tells us how much money is invested for retirement, or allocated for long-term

projects (such as maintaining infrastructure). I have to clarify this because you ask the question of how useful data is. As my wife said, "In the information age, the hardest thing to get is the information you need." This observation pertains not just to a Google search; it shows how difficult it is to associate data with the reason for searching. Navigation systems are much better because in the interaction between someone searching for information (e.g., "Where is the nearest barber shop?") and the database where data is stored, the user plays the most important role.

The level of ignorance we've reached in the age of Big Data reflects the fact that we became dependent on artifacts that are replacing our own judgment. Since we are no longer willing to invest in the human being—people are too expensive—we invest in machines. This effectively makes many of society's members useless. I do not say this has to happen; rather I say that *these are the choices people make*. They are the outcome of our priorities.

You study the human behavior in relation to technology and science and, at the same time, you anticipate change. Decades ago you forecasted the ubiquity of computers by 2016. And here it is, happening right now. What are we to expect in 10-20 years?

Whatever I submit to the reader is not the outcome of poetic inspiration, even less of speculation. I have built a model of successive societal changes inspired by the science of complex systems. (Check out my most recent YouTube, *A bifurcation called 2016* at https://www.youtube.com/watch?v=a4_bTki7TII.) I bring up the *necessary* character of the changes we are undergoing. As long as human beings pursue a course of action driven by the desire to have access to everything at the lowest price and least effort, the need for efficiency will force us to shorter cycles of innovation and more frequent disruptive patterns. If the digital engine had replaced only the abacus, only those who manufacture the abacus would lose their jobs. But the digital engine is replacing all those who within industrial societies were involved in repetitive tasks characteristic of the industrial age. In the next 10 years, automation will erase, world wide, over 50 million jobs. Given the growth in the population—which is totally out of control in many parts of the world—we will be faced with a situation in which very few will become responsible for the vast majority, and accordingly will have a position of power that no democracy can accept. Therefore, I predict that parallel to automation and artificial intelligence-based means of control, a revolution utilizing digital means might take place that will challenge everything we know about politics, forms of government, ownership, and similar concepts pertinent to social life.

I took part in a radio program dealing with the role of the digital in culture and emphasized that a virtual tour of the Louvre cannot be compared to a real tour. Do I belong to the traditionalist model, doomed to extinction, or to a growing minority? (Allow me the metaphor of antagonism.)

Recently, during a magnificent concert in Zurich, in which Herbert Blomstedt conducted a rendition of Ingvar Lundholm's *Poesis*, someone with an iPhone managed to ruin the pleasure of the listeners nearby. Well, if you want to experience art you'd better go to see it, hear it, touch it, smell it—and hope that the digital barbarians will not interfere. That does not mean that you will not be subjected to the barbarism of those who confuse the aesthetic experience with an exercise in recording. At the Hermitage in St. Petersburg, the *Madonna Litta* (attributed to Leonardo da Vinci) became the object of "selfies" to the extent that one wished to keep the selfie-savages out. Still I would never recommend that someone try to get the meaning of this work by looking at it in books or bringing it up on the Web. (In Vienna, where the people have a quirky sense of humor, the city provided a large reproduction of *The Kiss* by Gustav Klimt for those desperate to get themselves in the picture.)

From the perspective of my understanding, things will eventually settle to the extent that a minority will still prepare soup at home, from scratch, while others will warm up canned soup and never realize what they

are missing. Some will attend concerts and museums, others will continue to consume "canned" art. By the way, art itself is changing, and not always for the better.

This is not one among the usual lamentations about the decline of literacy. As the author spells out from the beginning, to write several hundred pages that leave out those who are the very subject of concern would be preposterous. To praise literacy for the literate ones (encouraging their contempt of the illiterate), would be snobbish.

This book (which speaks of sex, food, goods, God, supermarkets, computers, sports, tv, virtual reality, philosophy, science – and also of writing and books) does not only deal with the Dark Side of the Gutenberg Galaxy; it mainly speaks to those who believe to live on the luminous one. It is not for THEM, it is only about THEM, it is also for and about US. And we (the literate ones) will discover many things that we did not know (as yet, or enough, in spite of our Wisdom).

UMBERTO ECO

The values of the past were religion, knowledge, family. Today's values are money, technology, data. Are we at the border between two civilizations?

The values of the past were associated with permanence, with the understanding of the world as deterministic, and with distinctions between good and bad predicated not only by religion, but also by the scale at which human activity took place. The more effort you put in, the higher the reward. It is within this system of values that religion easily distinguishes between what we are able to control and what transcends our immediate understanding. This explains the effectiveness of religion, as well as the relation between a practical activity exercised by the faithful and the various accomplishments connected to the self-constitution of individuals as religious. Atheism has not made anyone more creative.

Within the new scale of human activity, dictated by efficiency considerations, religion survives marginally, mainly through traditions. Warning: religious fanaticism, as in extremist Islam, corresponds to the attempt to turn back history. But this is a different—although related—subject.

Let's talk about this in a different interview.

All right!

High efficiency, which facilitates the transition from satisfying the needs of individuals to their demanding the right to prosperity, abolishes permanence, stability, and the need for rules. The individual of this age succeeds by breaking rules, not by observing them. This is not the borderline between two civilizations. This is one civilization in which the fastest growing populations of Africa and Asia ascertain rights not related in any way to their efficiency, but rather in relation to the amazing efficiency reached in the most developed countries (which maintained Africa in a condition of dependency). Consumption drives the process. If Americans were not to pay for distributing to Africa and other places the surplus of their irresponsible intensive farming, the USA would face a crisis much more severe than the depression of the 1930s. Self-interest rather than generosity is the motivation. The cell phone, to which not only refugees, but also people in the various camps where the poor of the world are fed and sheltered, have claim, replaced the need to read and write. But the cell phone also created dependencies that are rather similar throughout the world. This is a process of tethering the individual. The slogan of the day broadcasts empowerment. The reality is quite the opposite.

There is an educational gap, a civilization gap between Romania and the other countries. How do you see your country from the distance [the USA]?
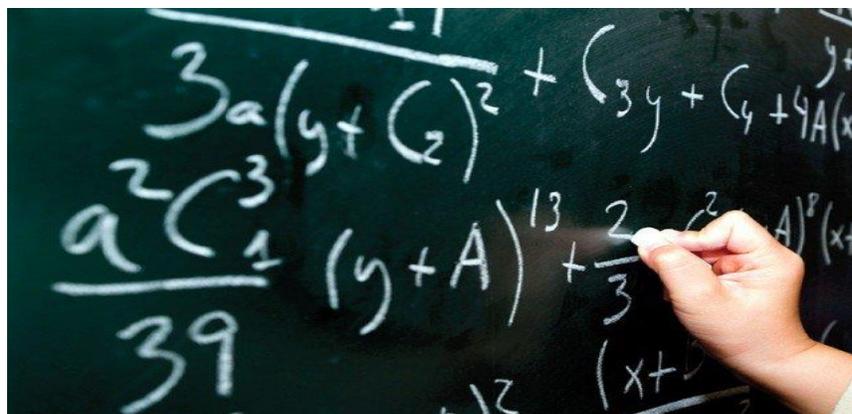
You mentioned the fact that the dynamics of change in the world is not the same in Romania as in the USA, Switzerland, or South Africa. While I cannot competently assess how far behind Romania is, I can suggest

to Romanians to give up the patterns of behavior associated with their relatively dramatic recent past. The time of top-down predicated changes is over. This is a time of opportunity. If you expect miracles to happen, because in Brussels or in Bucharest somebody with a good idea will make them happen, you will be disappointed. There is a lot of talent that has to be allowed to break loose. Do not allow others to exploit Romania as a source of cheap labor and natural resources.

I know that you praised the beginnings of your education in Romania, but today's educational system is becoming more and more commercial and less meritocratic. Are we going to live in a world of less educated, less prepared individuals?

Don't start me on how education became a business. I don't want to use this occasion to criticize (yet again) the fact that the most important human asset—our creativity—has been turned into a commodity through the hands of profit-seeking, incompetent administrators. Let me rather look at the opportunity to reinvent education. There are still very fine places where creativity is well understood and education is practiced in individualized forms. I am rather optimistic. Many in the "business" of education will go bankrupt. The sooner, the better. New forms of education, corresponding to a dynamic framework of very fast renewal of knowledge, will replace them. We don't need more buildings, we need better interaction among those teaching and learning, driven by shared goals, not absurd regulations.

Culture means humanity. While culture remains the attribute of some idealists who live with the nostalgia of the scholarly model, technology is invading society, taking over more and more of our lives. Are we undergoing a process of dehumanization?

The essence of the human being remains its creativity. Each of us is different. In the past, we tried to shape everybody according to the ideal of the industrial machine. The challenge today is to acknowledge difference and build upon it. Every place where the machine model of the human being is practiced, we have dehumanization. Think about wars, about governments trying to control us, about companies wanting to own us. Think about education run as a machine. Think about scientific explanations of behavior starting with "The human is wired…".

The old humanism held (and still holds) the deterministic cause-and-effect connection: if you do good, your efforts will be rewarded in the way you expect. George W. Bush wanted to build democracy—and we got never-ending wars. Angela Merkel and François Holland act in the same deterministic framework: do good and you will get only good in return.

The new humanism is based on acknowledging possibilities. Instead of giving people a fish to eat, teach them to fish, in a sustainable manner. There is an impressive expression of new human values in the creativity of those who, defying past rules and norms, made possible amazing new ideas, amazing new forms of human interaction. At the same time, they ascertained a freer spirit than ever known before. Some examples: *So you think you can dance*, a TV program in the USA, opens up opportunities to kids (some from the street who mostly knew breakdancing) who eventually became the new stars of "start-ups" way more interesting than some in Silicon Valley.

I know! We see them everyday on TV!

If they were to go to a school in choreography, it would take years to make them pale copies of their teachers. George Hotz discovered how to unlock the iPhone and the PlayStation, and now makes, in his garage, a self-driving car that competes with Tesla. Aaron Swartz (pushed by a corrupt legal system to his tragic suicide) carried out the slogan "information wants to be free." Indeed, Swartz noticed that research

supported by public money and published by the scientists involved ends up making publishers rich. The public who paid for that research would have to pay again, at exorbitant prices, to get access.

Let's hack the system, not to make people's lives difficult, but to force those who deliver mediocre products to live up to their responsibilities. The governments are hacking us, secret services are hacking, every company spies on their clients and customers. If this is the case, let us affirm our own right to hack as a way of protest, or resistance. We are entitled to our authentic freedom, not only to the freedom to consume that will make the rich richer. Every form of creativity is an expression of hacking—unlock the new, explore what is behind the appearance, ascertain individuality and originality—but always in association with responsibility. In this sense of creativity, to say "hello" to the skewed humanism corresponding to a limited understanding of the world is rather something wonderful.

Thank you Professor Nadin for your time!

*WHO IS MIHAI **NADIN**?*

Born in Brasov, Romania on February 2, 1938, Mihai Nadin studied at the School of Electronics and Computer Science at the Polytechnic University in Bucharest, receiving both a Master of Science degree, and then a doctoral diploma. His experiments in computer graphics (pioneering activity in this field starting in 1964-1965) won him world-wide recognition for contributions to a new aesthetic. At the School of Philosophy at the University of Bucharest, he specialized in Aesthetics, receiving a doctorate in the field. He obtained post-doctoral degrees (Logic, Philosophy and the Theory of Science) at the Ludwig Maximilian University (Munich) and in neural metworks Johns Hopkins University.

His formation is interdisciplinary, as is his entire research activity. It covers the fields of electronics, aesthetics, semiotics, human-computer interaction (HCI), computational design, post-industrial society, and anticipatory systems. His publications on these topics number over 200. His more than 33 books include studies in the arts, semiotics, mind, anticipatory systems, as well as essays and works of fiction. He has lectured around the world since 1980. In 1994 Mihai Nadin established the first ever Program in Computational Design (design for the age of ubiquitous computing). He is cofounder of the modern study of anticipatory systems, and in 2002 founded the first Institute for Research in Anticipatory Systems. which in 2004 become part of the scientific research system of the University of Texas at Dallas.
He taught at the Rhode Island School of Design, Brown University, Bergische Universitaet Wuppertal, Stanford University, the University of California-Berkeley and the Universitaty of Bremen. In the course of his teaching career, he has had more than 12,000 university students and over 500 doctoral students, many of them active in well-known universities and companies throughout the world. He is a Distinguished Fellow of the Hanse Wissenschaftskolleg/Institute for Advanced Study (Delmenhorst, Germany), where he coordinates an international network of scientists interested in anticipation. Since 2004, he holds the title of Ashbel Smith Professor at the University of Texas at Dallas.

Seneludens—one of Nadin's major projects—aims at maintaining anticipatory capabilities in aging invividuals (but not limited to them) through participation in interactive environments. His current research field continues to be anticipatory systems, focusing especially on conceiving new computationl forms that include the physical substrate and the processes that define living.