



Hard Times: The Thinking Crisis in the No-Knowledge Society

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Abstract

The “new” digital (hyper) velocity, in its complex interaction with the human factor and with social relations, preserves the original ambivalence common to any “factor” of change and to any social and cultural process. The complexity of this interaction, apart from representing an extraordinary opportunity, also evades any kind of algorithm or other artificial intelligence systems. The ambivalence and complexity that expose our limits and inadequacies, which have been socially and culturally “constructed” precisely through the teaching and training from within our educational institutions, are still incapable of taking in the ongoing change and, what is more, of providing a working translation of the widely acclaimed “paradigm shift.” Even more significantly, the “new” digital (hyper) velocity, with its baggage of ambivalence and complexity, aside from underlining our personal, organizational and social inefficiencies, truly leaves us with very little time for reflection, for thinking, and even more, for a critical analysis of what is happening, and more generally for a critical analysis of (hyper) complexity itself, as it continues to reveal the radical inadequacies of our paradigms, of our interpretative models, of our traditional cultures as well, and in particular, of our modern instruments of management and control.

“Uncertainty is the natural habitat of human life—although it is the hope of escaping uncertainty that is the engine of human pursuits. Escaping uncertainty is a paramount ingredient, even if only tacitly presumed, of all and any composite images of happiness. This is why ‘genuine, proper and complete’ happiness always seems to reside some distance ahead: like a horizon, known to retreat whenever you try to come nearer.”

– Zygmunt Bauman, *The Art of Life*, Polity Press, Cambridge (2008)

Hard times, very hard times, for thinking, for those who propose engaging in thought or a *thought system*, for those who “think”, attempting to get away from certain too reassuring or too catastrophic narratives, for those who think tangibly (almost an oxymoron in these days), that in order to re-start (a mechanistic metaphor) and truly think ahead in the long-term period, it is necessary or it would have been necessary to radically tackle education and research on education and on didactics. Hard times, very hard times, so critical, so daunting, that have given new impetus to *age-old narratives*, simplified, reductionist and deterministic narratives, including those on the digital and hyperconnected civilization.

Hard times, very hard times, for whoever continues to insist on long-term strategies, on the urgency of creating a culture of responsibility and prevention, on re-starting, evidently (let me repeat myself once again), from education, training, and research; hard times, very hard times, for those who reflect on and study the *crisis of thought* (rather than that of words and language), which has been going on for a very long time, in all shades and declinations.

And so... thought and thinking, “thinking about thought”, researching thought: notwithstanding the attempts at reproducing it, emulating it, simulating it, thought has always been an essential dimension whose vital importance has been deliberately ignored or underestimated, a dimension that the hegemonic paradigm often considers futile, something which, according to the hypertechnological civilization with its obsession for automation and simulation, can be simply delegated to technology. Facts, figures and data dominate the scene—all necessary elements, of course, but as I have often underlined, they are presented as though they were inevitable “facts of life”: Yet, as they used to teach us in the days of yore in courses on methodology of research and epistemology, facts and data “can never speak for themselves.” Thus these necessary but insufficient skills and competences, digital competences above all, are (believed to be) the only ones that count, as long as we do not think about the long term consequences. Know-how, concreteness and automation are all aspects of the dominant mindset I have defined as “the tyranny of concreteness” (Dominici P., 1998-2019). There is never enough time—time for thought, for reflection, for living, for vitality, for complexity. Thought is so greatly feared and so little practiced.

As Bertrand Russell once wrote:

“Men fear thought as they fear nothing else on earth—more than ruin, more even than death. Thought is subversive and revolutionary, destructive and terrible; thought is merciless to privilege, established institutions, and comfortable habits; thought is anarchic and lawless, indifferent to authority, careless of the well-tried wisdom of the ages.” (Russell B., 1916)

In this era of hyper-simulation and automation, there seems to be little place or opportunity for thought.

1. Speed vs. Thought

The “new” digital (hyper) velocity, in its complex interaction with the human factor and with social relations, preserves the original *ambivalence* common to any “factor” of change and to any social and cultural process. The complexity of this interaction, apart from representing an extraordinary opportunity, also evades any kind of algorithm or other artificial intelligence systems. An ambivalence and complexity that expose our limits and inadequacies, which have been socially and culturally “constructed” precisely through the teaching and training from within our educational institutions, are still incapable of taking in the ongoing change and, what is more, of providing a working translation of the widely acclaimed “paradigm shift.” Even more significantly, the “new” digital (hyper) velocity, with its baggage of ambivalence and complexity, aside from underlining our personal,

organizational and social inefficiencies, truly leaves us very little *time* for reflection, for *thinking*, and even more, for a critical analysis of what is happening, and more generally for a critical analysis of (hyper) complexity itself, as it continues to reveal the radical inadequacies of our paradigms, of our interpretative models, of our traditional cultures* as well, and in particular, of our modern instruments of management and control.

“Our systems of cognitive and evaluative orientation show themselves to be inadequate for facing a constantly evolving social reality consisting of complex systems.”

Along general lines, we can affirm that “speed” and acceleration (and a certain idea/vision/culture of speed) limit/complicate/get in the way of “reflection”, of the practice of *logic* (which, as I have been repeating for years, should be taught from the very first years of school on) and “critical thinking.” At the same time, the obsessive pursuit—at any cost—of simplification (?), which clearly serves a useful purpose and should be pursued as long as it does not force us to lose sight of the whole, the global, *the complex*—intrinsic to social, economic, organizational and cultural processes—leads to the trivialization of our analyses and of the related solutions proposed.

Consequently, little space/time is left for queries, critical analysis and (incessant) research, and this is true not only in public discourse and in the *dominant narratives*, but all through society. Although, at least apparently, many voices today are calling for something which, through scientific pathways, and more generally, in the development of knowledge and innovation, is almost taken for granted: the importance of asking (ourselves) “questions”, and of questioning the dominant paradigms and consolidated models, of seeking out the weak points and *anomalies* in those kinds of knowledge, and also among those stereotypes and prejudices, it is precisely the latter that not only condition us on many levels but in the meantime reassure us because they make it easier for us to decipher, *de-code* and assign meaning to life and to our surrounding *reality*.

Hence we continue to look exclusively for simple *solutions* and answers to complex problems (this is what interests everyone: they know, learn and want to know only “how to?”), solutions that must be found in less and less time, carried out with a request for such rapidity of execution that it forces us to depend totally—giving them *complete carte blanche, with unconditional trust*—on technique, machines, robots, expert systems, artificial intelligence and the new technologies, under the delusion of being able to eliminate errors and unpredictability, with profound repercussions in terms of management, surveillance and *responsibility*. Once again, in this situation, thinking and, most of all, reflection are incompatible with velocity—with an excessive velocity which, I repeat, reveals all of our weaknesses and insecurities, even among organizations and nation-states.

* Culture, intended in a general sense, is a historically determined set of practices and beliefs, of models and instruments appertaining to a specific historic-cultural context, which could also be defined à la Weber, as “a finite segment of the meaningless infinity of the world process, a segment on which human beings confer meaning and significance”, meaning and significance, naturally, from the Subject’s point of view. (See Weber, 1922, p.96)

Facing these crucial issues with this approach, in any case, does not mean questioning the importance and value of technique and technological innovations. However, it does pose dilemmas that we must have the courage to face because the implications for our future are significant.

As I wrote some time ago on the subject of security and liberty, never before has the image of the Global Village—prophesied by McLuhan (1964)—come back so clearly to haunt us, which—albeit in a context dominated by rationality and by the logics of control and surveillance—seems to feature an entropy that disequilibrates the balance of the so-called ‘infosphere’ (Toffler, 1980; Floridi, 2010). A ‘global village,’ increasingly interdependent—this is by no means the first time I have made this point—that resembles more and more closely a hyper-technological and hyperconnected—but above all—a hyper-surveilled mass society (Byung-Chul, 2012, 2013; Dominici, 2008-2017).

Considering the complexity of such a metamorphosis and the new situations that it implicates, whose solution cannot be met simply through acquired experience, an in-depth analysis of the possible ramifications correlated to the coming of the technological network civilization is sorely needed. As discussed elsewhere, we are talking about an *anthropological transformation* (Dominici, 1996 and further works), evidently capable of changing our way of understanding reality and the world system, yet whose possible consequences are no less dangerous all the same.

Caught up in the midst of a paradigm shift and this anthropological transformation, we are witnessing/living through an *overturn of the complex interaction between biological and cultural evolution* (1996 and further works), a profoundly relevant question and one that, in terms of the “communication culture” (*ibidem*), has become even more complex and problematical, owing to the lack of a thought system and a *theoretical-interpretative model* capable of observing, recognizing and endeavoring to *understand hypercomplexity* and the (in some ways overbearing) *bursting forth of chaos* (Dominici, 1995-1996 and further works).

And so it comes about that this *new social complexity* is defining the structural conditions heralding a kind of *reflective knowledge*, which will have to cope with the crises of thought and cognitive paradigms and with a general incapacity for proffering acceptable solutions. Our systems of cognitive and evaluative orientation show themselves to be inadequate for facing a constantly evolving social reality consisting of complex systems—that are themselves marked by an extreme sensitivity to perturbation—which are able to self-organize and evolve in a manner that is in no way linear or predictable.

Yet our very lives are emergent, infinite sequences of dynamic processes in which chaos (Lorenz, 1963; Gleick, 1987; Stewart, 1989; Kiel, 1994; Prigogine-Stengers, 1997) and emergence reveal themselves in every possible and impossible, every inconceivable, unforeseeable manner. Social/human life is characterized by *infinite sequences of “black swans”* (Dominici 1995-1996, 2003-2019 and further works), to use an ancient metaphor that was already very popular among past civilizations. Error, unpredictability, hypercomplexity and systemic dynamism are its constituent elements (*ibidem*).

Speaking of which, I have a strong inkling that, so often, on all planes of action in social and organizational praxis, when faced with situations or dynamics that have escaped their

control/illusion of control, what those who insist on the “black swan” concept/metaphor, (and here I am not referring, obviously, to Taleb and his famous work *The Black Swan* (Taleb, 2004, 2007, 2012), what those who insist on the sudden appearance of an unimaginable and unforeseeable event, or in any case, of one that is *highly improbable*, are doing/trying to do, is to utilize/construct the classic “*ex-post rationalization*” in order to reassure themselves and those around them that, notwithstanding a few isolated episodes, everything is still “*under control*” and predictable. Part and parcel of the “*grand illusions*” of the hypertechnological civilization.

It is thus becoming more and more urgent, after so much delay, to realize the importance of a thinking style and a politics that can no longer afford to have a close-minded and particularistic outlook, especially in an era where signs of insecurity, uncertainty and vulnerability of every kind are on display, an era where *dramatic conflicts are taking place that fuel the illusion, not only among the political classes and leaders of the nation states, of the prospect of finding simple and immediate solutions to complex problems*, but also—and above all—that *reinforce the rationales of exclusion and of perpetual emergency*. All of this without considering, on the other hand, the new asymmetries and inequalities that are paradoxically becoming more and more blatant.

It is the people—this must be clear—and the community who always bear the consequences. Even more so in these moments of extraordinary, continual and systemic emergency. Although the reasoning and logic used during emergency situations are comprehensible, known factors, what comes rushing in, stronger and more invasive than ever before, are the discourses and narratives linked to our faith in a civilization based on illusory rationality and that we will eventually succeed in eliminating all error from society by predicting, measuring and controlling every aspect of our lives.

According to which, only the “facts” count, only the data are useful (and presented as “facts of life”), even when the empirical evidence and variables are missing, and for these same reasons, even when no one is capable of predicting with any certainty whatsoever the absolutely non-linear evolution of this pandemic (series of pandemics), this concept persists and insists that what is needed are solely technical skills and hyper-specialized technicians: solely “know-how”, solely and exclusively competences, in what has become an ideological conceptualization of competence.

One of the many possible examples of this mentality is that in order to achieve “innovation” (with all the ideological sauces this word is served in), all that is required are data, technologies, and above all technologists, or in certain cases, some necessary legal or normative adjustments involving legal experts. *But what kind of social or cultural innovation could ever be activated through these methods?*

These themes have been discussed and written about for decades, endless research and studies have been produced, and yet where do we find ourselves today? Every time we come face to face with data and research that underlines our structural backwardness—from every perspective, throughout the decades, all (almost all) those who have the responsibility and the power to make decisions, have chosen to fall back onto this deceptive and misleading

mindset, which, besides other consequences, continues to propagate a top-down model of technological innovation, without any kind of cultural backing—a mindset which will never allow complex organizations and ecosystems to metabolize the technological transformation, which, as I have said so often before, produces/triggers/determines (even beyond a causal nexus) a transformation which is first and foremost anthropological. A far cry from a grassroots construct (another concept that is constantly cited), a far cry from social innovation, a far cry from digital citizenship and participative democracy, a far cry from long-term policies, where we have been heading for many years, is in the completely opposite direction.

2. The hegemony of the “economistic” paradigm and the urgency of “caring”

Social distancing and quarantine during the COVID-19 pandemic, perhaps I should say self-isolation, apart from leading us to reflect on many fundamental issues related to our public and private lives, apart from leading us to reflect on the strategic centrality of knowledge, knowledge sharing and “shared knowledge”, and even more, on the privation of dimensions/aspects/factors that we have tended to take for granted (first and foremost, our “freedom”, a complex concept of many shades and facets, as well as the essential value of “relationships”), have led us to reflect deeply on how this pandemic, in its global dimension as a social phenomenon, has changed our lifestyles (but not, I believe, our value systems) and our expectations. A society that has been built on individualistic and utilitarian principles, on competition without rules or regulations, marked by such deeply rooted particularisms and privileges in all social layers, a society structured for elites and corporations (a feudal social model)—an “asymmetric society”, as I have defined it—cannot transform itself radically, not even in the presence of this pandemic. There have been various precedents: disasters, catastrophes, and emergencies of every kind; so often we refer (mistakenly, in my opinion) to “social capital”, crises of trust and cooperation, complex social mechanisms that involve numerous triggers and concauses.

The hegemony of exploitative rationality and of the (self-regulating) market economy has ended up imposing a dominion-based line of reasoning that has spread through every aspect of social life. This process has weakened the bonds that transform individual choice(s) into collective projects and actions. What has been generated, therefore, within social cohabitation, is a strongly individualized global society, which places an enormous burden of responsibility on the shoulders of all single actors, who are called upon to manage their “individual freedom” responsibly, with no community to support them. In this light, the development of forms of mediated communication (Thompson, 1995), apart from the advantages in terms of online working and knowledge sharing, could end up causing the mechanisms that are the protagonists of “social capital” to cool off to an even greater extent.

“Care”, “caring for”, or “taking care of” what we call “society” requires/should require/would have required (and in the future, will require) diverse actions and strategies other than a sequence of renewed awareness. By no means the least important, that of finally beginning to question the hegemony of our economic (and “economistic”) paradigm (*otherwise, there is no use talking about “the paradigm shift” or rethinking our developmental models, and*

we might as well give up on the idea of sustainable societies and economies). As I have been underlining for some time now—but it must be clear, this is not a criticism per se of economics or economists—in analyzing the ongoing complex social transformation and the new asymmetries and inequalities, which are educational, cognitive and cultural, as well as many other issues, we must acquire consciousness that economics is not a “hard science”, but rather a “social science” (1998-2003), with all that this implicates. At the same time, so long as *society continues to be considered/conceived/managed as a subsystem of the economy, we will not make much progress.*

“We continue to make the fatal error of thinking of society and of organizations as though they were machines (another mechanistic metaphor) rather than organisms.”

It might seem astonishing (although I for one am not astonished) that we still have not realized, in passing from a reductionist and deterministic outlook to a systemic and multi/interdisciplinary approach (Mead, 1934; Wiener, 1948, 1950; Heisenberg, 1958; Arendt, 1958; Ashby, 1956; Simon, 1962; von Hayek, 1964; Canguilhem, 1966; von Bertalanffy, 1968; Piaget, 1970; Bateson, 1972, 1979; Anderson, 1973; Morin, 1974, 1993, 1994, 1977-2004; Holland, 1975; Feyerabend, 1975; Capra, 1975, 1996; Feyerabend, 1975; Musgrave–Lakatos, 1976; Haken, 1977; Maturana–Varela, 1980, 1985; von Foerster, 1981; Luhmann, 1984, 1990; Bocchi–Ceruti, 1985; Maturana–Varela, 1980, 1985; Ceruti, 1986, 1995; Gleick, 1987; Gallino, 1992; Watzlawick et al., 1971; Kauffman, 1971, 1993; Gell-Mann, 1994, 1995; Prigogine–Stengers, 1979, 1984, 1997; Diamond, 1997, 2005; Emery, 2001; Morin, 1973-2015; Barabasi, 2002; Israel, 2005; Gandolfi, 2008; Dominici, 1996-2019; Taleb, 2013; Sloman–Fernbach, 2017; Tegmark, 2017; Gentili, 2018), to what extent the psychological, psycho-social, relational, social, cultural and socio-cultural/contextual factors determine and direct economic processes. And how much more extensively they will continue to do so in the hyperconnected, so-called knowledge society. However, it would be well to clarify: it is not a matter of establishing which comes first, the economy or society; it is, once again, a matter of becoming aware that what we are dealing with are complex, rather than complicated, systems.

The exponential growth of financial power has had extremely negative consequences for the world economy and above all for the lives of people; what this process of forming a virtual space, where money and information can flow at an extremely high speed, has done is to empty politics and the power systems of the control of their own “bodies”, separating them even further from civil society and from the single social actors. And the belief that technology (in particular, the web), can solve any problem, including the capacity to bring politics and citizens back together, could turn out to be yet another fatal error.

On the contrary, social and political praxis, even while finding new virtual areas for the construction and organization of consent and/or opinion(s), requires a crucial passage from theoretical design to solid practical action, which must influence those making political

decisions. This calls for informed and critically educated social actors in flesh and blood, active and aware recipients within their networks of social cooperation.

Because meeting people, even just crossing paths, looking into their eyes, speaking to them, interacting, even with those we do not know well, and listening to the sounds and noises of public gathering places, is truly something that cannot be substituted. Never have we been so *hyperconnected* and interconnected, and yet, at the same time, we have never felt the absence of the Other, of others, as in this phase of “mediated closeness”. *The absence of a complex relationship can in no way be simulated.*

We are ourselves “complex systems”, so our need for others and for a relationship with them is a desperate need. This is because, as complex and open systems, we are ourselves in relationships. We need others and their nearness in the same way that plants need sunlight. Because sooner or later (no one can establish exactly “when”), *we will go back to the social, to the vital, to the fascinating as well as unpredictable beauty and complexity of relating without mediation and without the filters/limits imposed by the use of connection technologies.* As I said many years ago, no matter how extraordinary they may be, and despite the fact that we have not yet fully understood their potential and their ethical and epistemological implications, connection technologies provide merely a “simulation of communication” and of social relations, at times even emptying them of certain fundamental dimensions. From the same analytical perspective, the awareness that is still missing is, once again, the complexity of thought and of social and organizational cultures. We continue to make the fatal error of thinking of society and of organizations as though they were *machines* (another mechanistic metaphor) rather than *organisms*. (Capra, 1975, 1996; Barabasi, 2002; Israel, 2004, 2005).

We thus find ourselves at a standstill, stuck in what is simply a pose, merely resembling (or even worse, simulating) movement and dynamics; stuck within a series of illusory certainties, convinced that everything is under control and governable. Sooner or later, however, we will come to realize, no matter in what area/level of social and organizational praxis, that we have been fooling ourselves all along, and at that point, all we will have left is fear, indifference and withdrawal from everything and everyone. Faced with an even more evident and recognizable hypercomplexity that denotes the ongoing change, for which our educational institutions are dramatically unprepared; faced with the exponential growth of interdependencies/interconnections/interactions/conditioning factors that form the neural network of phenomena and processes, we have been witnessing for some time—almost paradoxically—the dominion/hegemony of reductionist and deterministic analyses and explanations and the return of a neo-positivist vision or conception of reality and of what is real.

3. The Grand Illusions of the Hypertechnological Civilization

Dynamics and processes which take form, on the one hand, with an—at times compulsive—search for simplification at any cost, even when it is partially dangerous to simplify (for instance, in *education, training, communication, democracy*) and, on the other hand, in what I mentioned before as the “grand illusions of the hypertechnological civilization”: *rationality, control, predictability, measurability, elimination of error* (Dominici, 1995-1996, 2003 and

further works). Along with these errors I have often pointed out the “Great Mistake” we are making (1996): to keep thinking of education, training and educational processes as a question of a purely technical nature, solely a problem of “skills” and “know-how” and nothing more, which must be dealt with by staking everything on speed and simulation, and last but not least, the obsession with concreteness, which has become a veritable dictatorship. Added to this is the quick fix to the everlasting situation of emergency, which is currently unrolling (for how long?) through—what else?—a *digital panacea* to accompany the therapeutic scenarios and practices.

Every time I hear—or read—the fawning narratives and the praise lavished on a “direct” (and as simplified as possible) “digital democracy” on “digital citizenship” (but what kind of digital citizenship are we talking about if we cannot even guarantee the minimum requirements of plain citizenship?), on “digital education” (on whose approach I—and often I alone—have always been harshly critical), which continue to be proclaimed intact, unchanged, from every kind of sector, not only from the perspectives of media and social media, as well as terms such as “digital republic” and “digital inclusion” (!)—I have even heard the expression “digital empathy”. I realize once again how willing we are to let ourselves be seduced and guided by formulas and concepts that are completely foreign to our nature. Terms like digital education, innovation, complexity and so forth are flung about: words, words, nothing but words (words which should at least be given a working definition/translation, rather than behaving as though mere word power, or a “change in words” could suffice to change the things themselves). Words, slogans or quick-fix formulas, communication-come-marketing will never suffice. What is truly needed are actions and praxis set towards an objective of true innovation, equality, education and democracy. And yet, according to the various new ministries of technological innovation and digitalization, all we need for an ideal solution is to hire innovators and coding experts for our school system in defense of our “right to innovate”.

“No kind of digital citizenship is possible without guaranteeing the pre-requisites and the conditions of citizenship, without (at least) attempting to guarantee equality of starting conditions, whose absence renders all discourses about meritocracy purely rhetorical” (Dominici, 1995-1996 and further works).

Social media giants, government authorities, telecommunication companies, and global media platforms have come up with dozens of digital projects for remote schooling, for the enhancement of culture and education through the internet, online programs designed to “help the population comprehend all the potential of the internet, and to bring “digital culture into the home”, through which, apparently, cultural asymmetries will melt away like virtual snow through techno-unification,* despite the fact that, as all the “digital” actions/initiatives (and in general, every kind of technological innovation) carried out in these years have demonstrated: proceeding in this manner, along these trajectories, no kind of “culture”—much less, I repeat, “digital culture”—can be created. At very best, if these “actions” are performed correctly,

* An example of these initiatives, oriented more towards marketing than communication, can be found in an article published in the Italian newspaper *Corriere della Sera*: TIM: *Maestri d'Italia*, Operazione Risorgimento Digitale, March 2020

what this will amount to is a top-down imposition of a model of technical (but not social or cultural) innovation, whose outcome will notoriously be *extraordinary opportunities for small groups and elites*.

Years have gone by, more than two decades have gone by, and we are still in the same position, as though nothing had happened during this period, as though the fundamental questions related to education and training, and in particular to “educational poverty” and “functional illiteracy,” had completely passed us by. Governments come and go, as do political parties and their leaders; what does not change, however, are the experts, elites, networks and authoritative voices. What does not change are the technical fields of knowledge and skills called upon to provide guidelines and possible solutions, which, as I have said before, so often come down to simple solutions to complex problems, tied to the short-term rationales of politics. The slogans and narratives are still standing tall, strong, unfazed and unchanged, and not only from the perspective of the media and social networks.

Nevertheless, I have continued to write, study and do research with a critical approach, an “other” approach, for over twenty years, and yet, my focus, I am proud to say, is on education, *not* on “digital education.” And it is education that is “*the*” problem, not digital education; it is a question of method and approach. Consequently, I will repeat it once again: we must radically rethink education (Dominici, 1996-2019), along with research and training. There are many crucial reasons, among which is the need to learn how to inhabit the hyperconnected, technological environments that are otherwise destined to remain an opportunity for the few. Learning how to live with, and as I have said, to “*inhabit*” *the digital* (1995-1996), because “the digital” changes our way of perceiving and knowing reality and what is real (*ibidem*). In other words, I am referring to the well-known “ethical and epistemological implications” evoked today, it seems, by everyone, yet without giving coherence and continuity to their declarations.

On the contrary, the general approach and strategies are the same as ever, in confirmation of the fact that, while everyone is talking/writing about “paradigm shift”, anthropological transformation” (*ibidem*), “ethical and epistemological implications”, “digital cultures”, about “rethinking education and training, and last but not least, “complexity”, it is painfully obvious that these are just buzz-words, used as labels and slogans to demonstrate one’s originality. They are winning formulas, taken up, in many cases, precisely by those who formerly were the ones shutting out certain approaches and perspectives on study and research (critical thinking, systems thinking, multidisciplinary, interdisciplinarity, transdisciplinarity), in those very same educational institutions, those who followed other perspectives, often reductionist and deterministic, fueled by the press and media, and for many reasons, at times without having ever truly researched or studied these issues.

Yet technological innovation has always been a strategic factor of change in social systems and organizations, but if not supported by a culture of communication, by a *systemic vision of complexity*, and concerning political decisions, by social policies capable of setting off and supporting cultural change, it will always turn out to be a *would-be innovation* (Dominici, 1996-2019). The knowledge society and the new global ecosystem are destined to become more and more exclusive and closed-off, even where it is no longer possible to put up walls

and barriers to manage diversity, inequality and conflict. “Asymmetric society”, apparently open and inclusive, in reality guarantees only theoretical opportunities for inclusion and mobility, or within a purely legal framework.

Innovation is a crucial theme for coping with the challenges of the hypercomplex society and the digital revolution, but innovation must be inclusive, constructed from the bottom up through negotiation, and can only be realized based on education and training. When innovation is imposed top-down through exclusively legal pathways, the risks we run are those of “illusory citizenship” and “technological innovation bereft of culture” (*ibidem*).

4. Education is Innovation, Education is Inclusion, Education is Democracy

I have long been opining that an unequal school, a school that lacks “quality”, has always been the prerequisite and the best guarantee for defining, fueling and reproducing an unequal and asymmetric society. One has the impression at times that we are drifting, slowly but inexorably, towards a *society of ignorance* (Dominici, 2008, 2010), the *No-Knowledge Society**, hinged on a feudal model in which social mobility can only be horizontal. These questions reinforce the well-known correlation between education and innovation, between education and inclusion, and between education and democracy (Dewey, 1916, 1929, 1933; Dominici, 2005-2021; Robinson, 2015). With all the risks and opportunities that accompany the hypertechnological civilization, in particular the “carte blanche” bestowed on technology, regarding issues that are absolutely vital for social systems and organizations, involving control, rationality, protection, security, trust and social bonds. In developing these points, we cannot shirk from taking into account a series of factors and criticalities that intersect on differing planes of analysis and intervention that can no longer be neglected:

- the lack of a thought system and of a systemic view, and contemporarily, the underestimation of the importance of research on thinking and education;
- the lack of long-term policies related to education, training and research;
- the meagerness and inadequacy of investments in education, training and research;
- the lack of awareness and acknowledgement that education, training and research are the only genuine infrastructures capable of bringing change and innovation to many rather than to a few;
- the fact that school and university continue to be conceived, imagined and designed as two separate *bodies*;
- the lack of policies for orientation, completely neglected in favor of marketing strategies;
- the deceptive triumph of the guiding principle that knowledge and fields of knowledge must be first and foremost useful;

* *No-Knowledge Society*—a term I have coined as a more realistic version of what is commonly—and erroneously—called the “Knowledge Society”. The No-Knowledge Society is a type of society, characterized by the devaluation and the deterioration of its educational and training processes, in which the exponential growth of available information and (shared) knowledge corresponds to an equally exponential growth of ignorance, conformism and hetero-direction.

- the error of continuing to chase after business and markets in an *era of rapid obsolescence* of all forms of knowledge, skills, trades and professional profiles;
- the dominion and hegemony of a *culture of standardization*, completely pervading the cultures of evaluation and communication (Hammersley, 2013; Dominici, 2003-2021).

In these suspended and surreal times, deluded by what I call a “simulation of closeness”, we (perhaps) have more time for reflection and thinking. A question we must ask ourselves, especially in this moment, is the following: is it possible to be *vassals* in a democracy?

Unfortunately, there is still very little awareness of how subtle the borders between citizenship and subjection are, a very thin line that has become even thinner in the hypertechnological and hyperconnected civilization where illusions are spun and spread, and not only through narratives and storytelling. The illusion that is becoming more and more widespread, without even considering other variables and concauses, is that it is precisely digital connection technologies that will be able to create the conditions for “true” democracy and at last for active and non-hetero-directed participation. Dangerously dystopian ideas, linked to a reductionist and deterministic analysis of reality, because, as I have said so often in the past, what can be simplified are the instruments, procedures, language (partially), data and their visualization, but “democracy is complexity” (Dominici, 1995-1996) and, just like life forms and life itself, cannot be simplified.

For the time being, at least, and not by chance, we are stuck in the illusion of a less asymmetrical relation to power and in a purely “simulated” participation, a participation fueled by rhetorical narratives on simplification and disintermediation. Caught between utopias and dystopias that appear to be, finally, within our reach. In the form of simple solutions to complex problems. I repeat, democracy is complexity; it is relational, social, and human complexity (*ibidem*). Order and chaos, balance and conflict, control and unpredictability, normality and deviance, pluralism and conformity co-exist and co-habit within this *hypercomplexity*, along trajectories that merely appear to be predictable and controllable.

In the past few decades, we have been, so to speak, hurled into hypercomplexity, without knowing how to recognize complexity itself, how to perceive objects as systems rather than vice versa, without fully understanding the *significance* of *living* complex systems (Poincaré, 1885, 1908; Le Moigne, 1977; Mandelbrot, 1977; Maturana-Varela, 1980, 1985; Panikkar, 1989; Luhmann, 1984, 1990; Kiel, 1994; Gell-Mann, 1994, 1995; Krugman, 1996; Prigogine-Stengers, 1984, 1997; Israel, 2005; Dominici, 2003-2021; Morin, 1973-2015). The “*thinking crisis*” and the absence of a thought system have acquired even more urgency, precisely because we are becoming more and more conscious of the complex, interdependent and interconnected nature of reality as a system of empirical phenomena now that the inadequacies of linear and causal thinking can no longer be ignored. Emergency or no emergency, nation state or no nation state, global governance or no global governance, if we want to preserve a democratic way of life and construct a world for *the people*, we will have to teach ourselves and our younger generations how to *inhabit complexity* (1995)

without creating a “Panopticon” in the desperate—and futile—attempt to control, predict and subjugate ourselves and our own reality by becoming aware of the complexity of the vital and of the *vitality* of complexity.

5. The complexity of the vital and the vitality of complexity.

Structurally characterized by *emergent properties*—which are not, at least initially, “observable” because the observer is the participant and as such, will affect and be affected by what he is observing, by radical interdependency and interconnection among its parts (which are always “relations”), capable of self-organization and self-generation, irrepressibly dynamic, irreversible, unpredictable, heterogenic and *dissipative* in its non-linear evolution, capable of holding tensions, processes, phenomena, conflict, chaos, ambivalence, contradiction, paradox, apparently irreconcilable dimensions, together, permitting the coexistence of order and chaos, balance and instability. Open dialectics and *existential oxymora*, borders and limits that blur into *hybrid zones* and undefined, indefinable trajectories. Literally impossible to *manage* or to control (not just as a question of terms or *buzz words*) all of this is (hyper) complexity, the essential component of all organic aggregates, in other words, of all living organisms and biological, social, relational, human systems: *complex adaptive systems*, as said above, capable of self-generation and self-organization (emergence), made up of parts in whose multiple levels of systemic connections and interactions condition the non-linear behavior and the evolution of the systems themselves and of their ecosystems.

The paradigm of the hypertechnological and hyperconnected civilization, founded on the premise of the progressive *marginalization of the human*, of the human factor, which has always implicated and encompassed the essential dimensions of error, unpredictability, and above all, responsibility, seems to have succeeded in duping us into believing in its grandiose but risky illusions, as I have mentioned before, illusions of rationality, control, predictability, measurability and even the elimination of error from our lives. Between techno-solutions and “datacracy”, a “new” return to reductionism and determinism, having already, alas, bestowed *carte blanche* on technologies and on the enormous interests behind them, we have counter-reformed our educational institutions in the misleading and deceptive endeavor to succeed in simulating, measuring, predicting, and pre-determining everything: thought, behavior, interactions, forms of sociality and life itself. Mistaking, at times, education for indoctrination, education for regimentation, and continuing to teach and train “*mere executors of functions and rules*” (Dominici, 1995-1996 and further works), we have continued to separate something whose nature is deeply unified and interdependent, incapable of perceiving the togetherness, the bonds, the connections, the beauty, the unexpected, the unforeseeable, the unknown, and above all, the systemic and chaotic nature of their arising.

With the advent of Artificial Intelligence and its potential developments, it would seem that the last traditional and scientifically consolidated borders between “complicated” and “complex” systems are about to be done away with. However, the dynamics I believe may unfold, neither linear nor calculable, could well be a progressive evolution and transformation (through non-linear differentiation) of “complicated systems” into “complex systems” with a surprising, and in a certain sense, paradoxical return to the centrality of the human/natural element; hence, paradoxically, with a renewed centrality of error and unpredictability. The

human returns to the fore and to the core, with new, unprecedented powers and responsibilities never before conceived of in the history of humanity. We run the risk of being unable to evaluate in depth the consequences of our choices, which is perhaps irreversible.

It is Mother Nature, of course, who will have the last word; it is the complexity of complex systems, other than the irreducible vitality of the spirit and of life itself, which no technological device or system of artificial intelligence will ever be able to fully capture, manage and/or control.

Thought itself is an *emergent property* of that infinitely complex system known as the human brain. The current crisis of thought and thinking is so profound, systemic and, at this point in time, so deeply consolidated that where we are slowly headed (or rather not so slowly), if we continue to underestimate or play down its dimensions and implications, both on individual and social terms, is towards a society that, despite being completely global, systemic and hyperconnected, increasingly glorifies ignorance and *non-knowledge* and is destined to deprive itself of any opportunities for innovation, change, emancipation or democratization.

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