



The Ubiquity of Machines: Will Machines Overcome Human Beings?

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Abstract

The article discusses the ubiquity of machines in human societies and whether machines will overcome humans. It notes that societies find order through systems of values, resource management and allocation, which are both social constructs and technological representations of their environment. Any society is inseparable from its technical systems for needs like transportation. The sustainability of current societies relies on developing knowledge across fields. Technology, economics, politics, and culture are just aspects of the same social reality. The present crises stem from the weakening of modernity, an intellectual movement that emerged in Europe in the 16th century. It overcame issues through civilizational and cultural responses. The invention of writing, printing, and now electronic digitization were major revolutions in communication. While machines substitute physical strength, human communication involves tacit knowledge, feelings and passions that algorithms cannot emulate. Therefore, the role of machines remains a problem as old as civilization.

Human societies find their order and stability through systems of values, management and allocation of resources; these systems are, simultaneously, social constructs and technological representations of the relationship with their environments. This means that any society is inseparable from its technical support system—for transportation, energy, shelter, food and communications.

The sustainability of contemporary societies is therefore based on the development and use of knowledge arising from the different fields that enable a regular satisfaction of the conditions needed for survival. Technology, economic organization, political systems, morals, culture—all these are no more than different aspects of the same social reality, which emerge according to the perspective through which we stand to observe it.¹ Namely, a society is unthinkable without its technical vectors, whose character derives from the characteristics of the material, tangible relationships it maintains with the environment.

The high level of materiality with which we now live (and without which a human catastrophe would certainly occur) is measured by the intensity of our use of energy resources, the exploitation of soil and marine resources, the size of our cities, the density of connections between them, and the numerical expression of the human lives that populate the planet: almost eight billion people! This materiality is translated by the violent change in the location and constitution of many materials, as well as their transformation in order to be

used or consumed in sometimes very distant places. As materiality increases, the rate of this forced change expands. Violence against nature thus escalates; it can only be tamed by the deployment of adequate cultural behavior.

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The deep roots of the crises that we are at present living through derive from the weakening of Modernity—the intellectual movement and worldview that emerged, gained wide assent and set the pace of the evolution of Western European countries from the end of the sixteenth century onwards.

The sixteenth century was a scene of deep crises in several domains:

- i. military – the fear of being defeated by the Ottomans;
- ii. religious – The Protestant Reformation;
- iii. economic – the shift of the axis of the economy from the Mediterranean to the Atlantic;
- iv. educational – humanism dethroning scholasticism;
- v. the relationship with nature – the value of experimentation;
- vi. communication – the introduction of the printing press;
- vii. morals – the intellect taking the place of the soul.

Modernity was the result of overcoming these issues through a civilizational and cultural response. The importance of the introduction of paper and the invention of books and drawing cannot be underestimated. It was the increase in communication that originated the need and will to invent and multiply the scope of contrivances to amplify human physical strength, enlarging the ‘artes mechanicae’ nurtured at medieval monasteries and unfolding a mechanical culture that brought to light a new science of motion, i.e., modern science. Technology ceased to be a simple extension of nature into society and became a product of human intelligence.

The European expansion took place at the expense of a proliferation of machines in all tangible sectors—transportation, energy, construction and production. Machines of varied categories started to be seen everywhere. And in the nineteenth century, the Industrial Revolution brought the ideology of material progress to its peak, and was based on scientific enquiry—and technological exploration of nature, coupled with the recognition of the rationality of such endeavors.²

The success of capitalism in modern times proceeded through processes of separation of the basic components of social life in all communities. Vision was separated from light due to the use of instruments such as the ‘camera obscura’; the work undertaken by Machiavelli, who pointed out that “the ends justify the means,” sanctioned the separation between politics

and ethics. Politics became ‘administration’. Later on, a separation evolved between economy and ethics. Economic focus became centered on ‘production’.³

Simultaneously, the separation between economy and culture occurred. Culture’s role became subsidiary, an ornament embellishing society, that was quickly separated into two distinct classes: ‘elite culture’ and ‘folklore’. And in the transition to the twenty-first century, with the expansion of ‘services’ enabled by the new networks of communication at a distance such as the internet, the separation between ‘production’ and workforce finally took place. No wonder the engine creating tangible wealth stalled.

The discovery of semiconductors and the invention of electronic computers and devices did unfold the development of the new techno-economic paradigm based on the digitalization of communication. Machines were fantastic contrivances that substituted physical strength, so why not extend this substitution practice to new machines that would take care of human communication through the development of the concept of artificial intelligence?

This seemed like the perfect solution, a superb opportunity to bring the full replacement in the economy of workers by machines. However, there is a little snag in implementing this possibility: human communication is not solely about explicit knowledge and information; it involves tacit knowledge, feelings, and passions. No algorithmic procedure, however sophisticated it may be, can emulate or copy the whole of our process of thinking and communicating. Therefore, these are moves in quicksand.

The first revolution in the field of communication and information was the invention of writing. This was also the first digitalization—that of the spoken words. Without written words there would have been no cities, administrations, armies, states, or empires. The second revolution in communication was the introduction of the printing press, which was viewed in an epoch of primacy of materiality as a ‘machine’ for communication. Printing was one of the carriers of Modernity.

The third great revolution in communication is the one in which we are now living, i.e., the electronic digitalization of images and words, still in its beginnings. This was simultaneously a second digitalization—in what concerns visual images. No one in his (or her) full capacity can foresee today the deep implications of what digital image production and manipulation hold for our successors. If we believe that an image is worth more than a thousand words, we can only gaze at the immensity of the cloud that surrounds future societies in this respect.

The emergence of writing and the establishment of cities mark the beginning of a period extending till today: that of ‘domestication of man by man’ (which Thierry Gaudin assumes to prefer to the expression ‘exploitation of man by man’ for its biological meaning).⁴ Gaudin says that the domesticated animal is characterized by a transformation of its morphology and its hormone balance, since domestication is an asymmetrical symbiosis in which one dominant being manages the life of another. With the development of mechanical and professional arts, followed by the geographical discoveries of new people, new resources and new stars, the expansion of trade, the diffusion of machines, and the birth of modern companies and societies ensued.

New technologies, the proliferation of machines and a new organization of work and finance were fundamental elements in the construction of a new identity for the Europeans. Of course, the spread of industrial production and machines was accompanied by numerous conflicts, issues, and social turbulence. The system of capitalism is prone to societal, financial and technological crises.

“Let us not forget that behind any machine (less or more ‘intelligent’) there is always a person (individual or collective) who created it, or who owns it, for a well-defined purpose. It is behind the machine that we must look at. Always!”

Bento de Jesus Caraça discusses precisely what was designated then by “The problem of machinism”.⁵ Caraça says that “the process of the machine and its action on contemporary social life has been made, in recent years, many times, and with different orientations. There are those who accuse it of the greatest evils that presently plague civilization—unemployment, overproduction, the automatism of man, and there are those who (...) break into a cold sweat at the idea of what would be a world ruled by the machine, standardized, cold and without poetry. [But] (...) The existence of the machine in today’s life is a fact against which there is no need to fantasize or whine. (...) Nowadays, the normal development of peoples without it is no longer conceivable. (...) The evils are not in the machine but in the inequality of distribution of the benefits that it produces. (...) The fundamental problem is not a question of technique, but a question of social morality. And it is not up to technicians to deliver the solution. It is up to men”.

We can perfectly transpose these words to the present times, to account for the role of the new ‘intelligent’ machines, as well as the consequences of their growing presence in the life of our societies. The problem of machines (endowed with smaller or bigger ‘intelligence’) always lies in the exclusion of human beings from the resources that guarantee their survival and their autonomy, from which they derive their dignity. The new machines may be fascinating and even addictive, but the problems that envelop them are as old as civilization.

The spread of computers and their networks in contemporary robotized societies was initiated back in the 1980s. It was the matrix that generated electronic digitalization, the third major transformation in the field of information and communication, and a revolution still in its infancy, as mentioned above. We find ourselves in the heat of this transformation which, certainly, will change the face of the world. The new technological infrastructure will strongly interact with the societal organization and the institutions that will be part of it. A very different world is setting its course.

In *Après la Démocratie*, Emmanuel Todd says it is no wonder that there is a deepening of the emptiness of religious sentiment, which makes a wild variety of sects and confessions proliferate, emerge or reemerge. Or that there is an observed educational stagnation, with no

responsible people willing to finance the learning of new processes, knowledge and values. Or that a new social stratification is being born, accompanied by a definite impoverishment of the middle class. Or, still, that the notion of ‘economy of knowledge’ which is spreading is no more than the establishment of business management in everything that belongs to the public sector.⁶

In fact, we must again realize that the solution to the present uncertainties cannot be solely technological, because we are not dealing with a straightforward technical problem. What is at stake is mostly moral, social and political, i.e., it fully embraces societal culture in its broader sense. The issue involves human beings, machines, their interaction, and finally, human survival. It is the compound of the networks of these connections that needs to be addressed. Its depth lies in the inclusion of timeless themes.

Will intelligent machines overcome us? What will be left for us to do if machines carry out all the tasks of human life support? Will we then be able to decide otherwise? Will power still exist? Where?

Modernity has not yet completely disappeared, and the belief in humanism that humans are the creators of their destiny persists. As creators, a part of us still suspects that generating artifacts endowed with a life of our own will be possible! And thus, on such a glorious day, we are about to attain eternal life! Human beings, modelled by divine powers, will at last sit among the gods.

Many failed attempts to achieve that goal have littered the past. Several instances have occurred in which humans have challenged the gods (the immortals) in the futile hope of obtaining a source for everlasting life. Prometheus, the outcome of a society with no concept of progress, but of a return to a glorious past, ended up being severely punished for his crime. Faust, at the dawn of Modernity, finished by selling his soul to the devil. Frankenstein, in a period of growing industrial achievement, produced an anguished creature that vaporized into the dark.⁷ Before the Big War, the Time Traveller, the supreme rebel who discovered the sacred secret of time, disappeared forever with his machine,⁸ an act maybe heralding the fate of European empires. These were not recommended initiatives...

What then can we say about transhumanism and the remarkable simulations of intelligence in machines today? Or of the prospects for a society addicted to regulation by machines? Or even about the superintelligence that will eventually dominate and domesticate the world of human beings? Or the chimera of immortality?

These are no more than contemporary examples of modern mythology. We think they are fictions—about human creations that may assume an existence independent of the will of their creators. Let us not forget that behind any machine (less or more ‘intelligent’) there is always a person (individual or collective) who created it, or who owns it, for a well-defined purpose. It is behind the machine that we must look at. Always!

We will need to analyze, understand, discuss, ponder, decide, and act, all the time, forever. Using the languages, values and assumptions of the times we live in. It is the start of a deep transformation of our society that we are experiencing, engaging in, and eventually enduring.

Modernity is being phased out and ‘Something we still do not have a name for’ is emerging. But that ‘Something...’ will be the outcome of the ongoing interactions between cultures, expectations, infrastructure, resources, and the environment. The principles we establish, the institutions we design, and the talent we will cultivate,⁹ are critical to the quality of our becoming.

We know from history that nothing can be acquired forever. It is on the outcome of the collective endeavor of humanity that its future will depend. Not a twist of fate.

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