

History and consciousness of the future

Anticipacion mental y caos, with a new introduction, *Historia y conciencia del futuro*
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Introduction to the Spanish-language edition of *Mind – Anticipation and Chaos*

Let us face it: As science, especially in its computational forms, assumes the leading role in the fundamental transition from industrial to post-literate pragmatics, it has appropriated the human mind as its most important subject. Indeed, as long as psychology delved into the depths of how we understand each other and the world, the humanities (the Germans call the domain *Geistwissenschaften*, the French, *sciences humaines et sociales*, (conferring the title *Maitre ès lettres*), the Spaniards, *humanidades*) had a strong hold on the mind. *Cogito*, i.e., thinking, which entails mind processes, defines the species, and hence the humanities. Eventually, scholars and researchers in the humanities imported the specialized vocabulary of physics, mathematics, chemistry, and biology in order to describe the relation between brain and mind. They also accepted the input of medical research, although the brain remained more the subject of superficial measurements, such as weight, size, and the like that are connected to an infantile fascination with genius and to the concern for cerebral malfunction. Anthropology and, to a lesser extent, history had a firm claim to the question: How did the human mind evolve? They tried to discover the answer by analyzing the variety of ways in which the mind left its imprint on what people do, on how people constitute themselves through practical activities. (*Self-constitution* is a term I introduced in [The Civilization of Illiteracy](#), also presented in this issue.) Hunting, foraging, farming, trading, governing, working in a factory, are a few of the examples of self-constitution amply studied by anthropologists and historians. In each act of self-constitution, the human mind in interaction with other minds is the driving force. Hence, to study the past of the human being is to study how people, hence minds, interact.

But things change as we enter the age of a pragmatic framework whose underlying structure is the paradigm of information processing, networking, decentralization, heterogeneity, task distribution, and non-determinism, to name a few of its characteristics. The computer, in its many possible forms (from the dominant one-step-at-a-time von Neumann machine to massively parallel machines, neural networks, optical computers, signal processing, biocomputing, and soon quantum computation) embodies part of the new age. Genetics, as a qualitatively different information-based model, is yet another manifestation of this age. Networking – from the now trivial Internet and distributed World-Wide Web to the fast-emerging continuum of wireless ubiquitous computing – is yet another expression of this age. But foremost, this new age is marked by the solid expropriation of the mind by the sciences – cognitive science, artificial intelligence, artificial life, neurocomputation, brain mapping, and others. While anthropologists and historians grabbed the chance to integrate data processing in their endeavors, becoming mainly the “accountants” of the past, or a new kind of “storyteller” who derives narrations from records, the sciences took over the mind.

Scientists promised – and how much ignorance and impertinence the promise contains is not for me to judge – to decipher its mysteries. In 1970, Marvin Minsky, a prominent researcher in artificial intelligence claimed:

“In from three to eight years, we will have a machine with the general intelligence of an average human being. I mean a machine that will be able to read Shakespeare, grease a car, play office politics, tell a joke, have a fight. At that point, the machine will begin to educate itself with fantastic speed. In a few months, it will be at genius level, and a few months after that, its power will be incalculable.”

[cf. *The Virtual Duck and the Endangered Nightingale*, Digital Media, June 5 1995, pp. 68-74].

Minsky was serious, as serious as researchers who today hook the brains of mice to a computer in order to see how learning affects brain growth, not understanding that learning is mind interaction, not the electric stimulation of the brain. Since these scientists maintain to know a lot about hardware, programming, sectioning brains, and describing – mathematically, logically, or computationally – how humans think about things (common sense as a subject for computer scientists!), this machine-based knowledge formed the basis for their fatuous optimism.

In going over these lines, written for readers of a journal that addresses history and anthropology by a person who belongs to the scientific community, one could justifiably ask whether I am not an irresponsible crewman hastening to flee a superb Titanic, replete with all the marvelous technology available today, that hits an iceberg and slowly sinks. No, I do not predict the demise of computational science. In every new gadget, I see the promise of an exciting future.

Moreover, I am enthusiastic about the next phase of computation. Once digital technology grows out of its current infancy, humankind will experience a real transformation that will affect it even more deeply than digital technology does today. The most amazing result will be the confirmation of the dominant role of human minds in action. That is, human knowledge will play a greater role than it ever has in its history. My lines here are a way of explaining why, and arguing for, the re-appropriation of the mind by anthropology, history, and other humanistic endeavors.

Indeed, I am happy that my text, [Mind – Anticipation and Chaos](#) – originally published in English and German in a prestigious series whose list of authors included Nobel Prize winners – is now available in Spanish, and that readers of this journal will be the first to see it. The reason for my happiness is neither pride nor ego, but the hope that you will give life to the notions I advance in the book. A theory is not worth the ink it takes to put on paper if it does not affect practical experiences.

Minds exist only in the plural. You will read this statement in the text. I repeat it here because in the constitution of human minds today, we interact with minds that were – your subject of choice

and passion – and minds that will be – the real subject of history, in my opinion. Dialog is only one form through which this interaction takes place.

Anthropology and history have, at worst, to account for the change in the dynamics of mind interaction over time, in the many forms of dialog in which it was expressed. At best, the account must testify to the anticipatory nature of mind processes. If the dominant model of today's (i.e., the physical determinism of Descartes and Newton) were to remain the implicit "ideology," the backbone of anthropology and history, we will only find out what happened when and be led to interpretations easy to manipulate. Fascism and communism took their chances at manipulating history; the new commercial democracy of the so-called free market economy and the new world order are actively at work raping history before our eyes, and sometimes with our own participation. The mind's anticipatory characteristic is important to you because it opens a door to Why? Without this question, I personally see no justification for either anthropology or history, or any other human endeavor towards research and development.

When I claim that the subject of history is the future, not the past, I do so in full awareness of the provocative nature of the statement, but also with a sense of responsibility. As the experiences of the past for all purposes ceased to confirm Santayana's noble adage, "Those who fail to learn from the mistakes of the past are condemned to repeat them," we are faced with the expectation that historians address the future via the path of anticipation that connects experiences human self-constitution through answers to the question Why? After all, human beings always constitute themselves in anticipation of something: a better life, love, social order, political goals, performance in sports, artistic or literary recognition, improved communication. This future state, sometimes expressed in Utopian documents or even in utopian practical experiences, affect their current state. The future affects the present, and thus history.

As I write these thoughts, a very important scientific observation reached me from a congress in which natural historians (geologists, paleontologists, biologists, etc.) participated. I quote from a paper on mammalian evolution:

"Typically, there is greater turnover millions of years before and after the time of climactic change than during the climactic event itself. This pattern suggests that the climactic control on mammalian evolution is much more complex than previously supposed, that intrinsic biotic controls may be more important than extrinsic environmental controls."

[cf. Does climactic change drive mammalian evolution? In GSA Today, Vol. 9, No. 9, Sept. 1999, pp. 1-7].

You, as historians, will immediately recognize here how the future drives the present – and this holds true for revolutions, social institutions, the evolution of power structures, among other things. Concretely, history could, and should, focus on correlations – a difficult task for those who until now have considered that the arrow of time can move only from the past through the present towards the future. There is more and better history on the opposite path. Take your time. The human mind operates quite naturally in both directions.

Let techno-freaks and immature scientists continue with their spectacular obsession with How? The world can only rejoice that this obsession results in technological progress. But do not give up, anthropologists, historians, and humanists of all stripe! Indeed, restate your claim to the mind and make it your central purpose. Because if no one does it, we might end up enjoying the most amazing of all worlds, but in a state of melancholy of a no less amazing scale. Short of asking and finding out Why? we do what we do – work, love, eat, argue, participate in sports, dress in the latest fashion, build cities, go to war, and so much more – we are cursed to a depression that might eradicate our species before any physical catastrophe, including the human-made variety could.