

Didactics of Fossils

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We can read in *The Invention of Morel* that we lose immortality because our opposition to death has not evolved: we are still stuck in the basic, rudimentary idea of keeping the whole body alive, missing the fact that what really matters is to preserve only the part that has to do with consciousness. Consciousness has been precisely that critical element that we have believed distinguished us from animals, and by extension, from the rest of all living entities.

It's hard to imagine whether Charles Darwin could have had even a glimpse on the vast cultural impact that his *On the Origins of Species* would have when it was first published in 1859. We know that the book provoked a great international interest and debate, with several attempts to take far beyond the boundaries of biology and even scientific thought the ideas of natural selection, the survival of the fittest, and the implications of the "unintentional" paradigm of evolution that supported it. Despite the rapid arise of "Darwinisms" of all classes in the aftermath of the publication —social Darwinism, evolutionary economics, eugenics, and neo-creationisms as our contemporary Intelligent Design Movement— the truth is that the whole evidence collected by Darwin meant not only to redraw the line that separates humans and animals, but also to blur and confuse that line to the point of prompting the rebirth of all sorts of mythological forces that laid asleep —or captured— in the bottom of our dreams of progress by reason.

It is as if Darwin's ideas of survival and heritance across species were itself a proof of how our own cultural circumstances to assimilate that ideas are also determined by a logic of death and survivals. A clear instance of this labyrinthic loop was a recent debate held in San Diego, CA, and organized by the Penrose Institute, about the boundaries in artificial intelligence (AI), which has awaken the ancient debate on the thresholds that

distinguishes us from non-human subjects. The premise of the debate centered around how far AI will progress. Are we on the verge of producing machines that possess the true understanding and consciousness that human brains display? Is it possible with the continued advancement of today's digital technology —custom hardware architectures, novel machine learning algorithms, and more digital devices— to ever achieve such goals? Or, is it the case that digital technology will never be enough and rather we must look to new physics to achieve the conscious intelligence that humans possess?

Beyond its apparently futuristic appeal, richly stuffed with all sorts of elaborate techno-scientific concepts, the discussion was somehow a friendly recapitulation of a classical duel between two old visions of the universe. For the sake of clarity I'd like to bring out the figure of labyrinths to better illustrate what is this duel about and how it points to our current desires and nightmares on what makes us different from animals or machines, if there is any relevant difference at all.

On the one hand Dr. Eugene Izhikevich, a neuroscientist and CEO of Brain Corp, argued that science and technology must work hard in order to accomplish the enormous task of mapping every cell of the human nervous system, so that a reliable definition of intelligence and consciousness might be achieved. Once finished, this absolute map will provide the unambiguous route to simulate inch by inch the human brain. Despite its alleged complexity, this approach is quite elementary and resembles very much what is known as unicursal labyrinths, a single-path design based on a simple geometric pattern. Though they are known to be present in many ancient cultures, unicursal labyrinths were especially popular during the Middle Ages for its ritual purposes. As soon as they enter the cathedral, the faithful must cross through the labyrinth, commonly display in circular and concentric patterns inscribed in the tiles, going over its whole area, meditating as they walk through every centimetre of that transitional dimension. Thus exhausting every corner of that space was the condition to accessing the altar of Eternal Truth —or Knowledge, as Mr. Izhikevich envisioned.

On the other hand there was the mathematical physicist Sir Roger Penrose, which sustain an opposite vision about AI which very much follows the logic of multicursal

labyrinths or *perdederos*, a Latin word meaning a place designed to get lost. Mr. Penrose suggests that apart from our current ignorance regarding the true physics behind neural processes, we have a sort of conceptual limitation, a fundamental impossibility to produce a complete simulation of our mind or brain, no matter how advanced and powerful a computer designed for that purpose might be. He invokes some of the headlines of the famous and knotty Gödel's incompleteness theorems to explain this unbeatable limitation. In simple words, this limitation is like a head transplant: it will never be possible to realize such a surgery, not because of a lack of technical expertise or innovation but rather due to a logical contradiction. For where do the memories and imagination migrate when the head that housed them has been replaced by a different one, in which other life records dwell? Who is the donor, who the transplanted? In this view, nature, as multicursal labyrinths attest, is a never-ending puzzle, an essentially mysterious and dangerous place.

By the end of the debate, both presenters agreed that there are still a lot to be discover in the field of AI. It was held by both that a promising model for a future encounter between these two different perspectives lies on what is known as "Neural Darwinism", a theory developed by Gerald M. Edelman in 1987 by which our minds are viewed as little ecosystems. Memories, for instance, behave not as stalled records on a *cardex* but like living beings does in nature: adapting to a changing environment, mutating according to the contingencies of life, developing new organs and struggling against other species of impulses, instincts, and thoughts that populate the mind.

One might well regard this new Darwinism as a contemporary rebirth of the old notion of 'Palingenesis' (from Greek *palin*, meaning 'again', and *genesis*, meaning 'birth'): a human body creates memories that over time transforms into dreams as they blend with all sorts of desires and fantasies, which then sediment through its lifetime on the organs of such body, a body that once dead starts to decompose in simpler particles of the former dreams, images and thoughts and minerals that migrate or just wander around until they are eventually affected by a new encounter to compose an inhabit another body: animal, insect, plant, human, machine, picture, statue. No one really knows where is the threshold between these entities, abandoned to the infinite flow of universal metamorphosis. But

before making any new promise of future progress, it's worth looking at labyrinths once again, and find out if we are playing the role of the Minotaur or the one who's asked to slay it.