

Abstract

My way of conceiving physics emerges from these reflections because I highlight how physics does not describe the world but the image we have of it in the brain. I believe that wanting to understand physics without understanding the brain, which is also a physical apparatus, is, in my opinion, senseless. I will talk about it, but the sidelines I will expose some of my doubts concerning physics and some errors that I have detected in teaching.

I start from the first principle of dynamics, which wants any variation from rectilinear motion and from the state of rest due to a force. I note that any experimental demonstrations of this principle is wrong and I show how this principle reflects the neurophysiological structure of the visual system of humans and higher animals. Extending the reasoning, it appears that our brain has within itself a neurophysiological systems that reflects the mechanistic model of Democritus of Abdera.

Brain and sense organs, between which I consider a substantial distinction inappropriate, were formed through evolution and contribute to the survival of the individual, by the realization of the prediction of events favourable or harmful to him, in his environment. Prediction can also be regarded as the "cause-and-effect relationship". David Hume made it clear that the nature of this relationship is habit and he also spoke of similarity as a way of recognizing causes. I believe I need to deepen this last aspect, in the light of the evolutionary theory of Darwin and Wallace.

I do not see in evolution, with its massacres and enormous suffering, any tension towards the knowledge on the essence of being, but cruel attempts to create an organ that allows the recognition of those causes whose development will lead to satisfaction of the basic needs of the living being. This allows me to infer that the cause can only be recognized in a specific environment, the one in which the living being has developed and relative to its primary needs, the satisfaction of which must be seen as an effect. The effect is the aim of brain activity and together with the environment, it forms the brain so that it can recognize the cause. I conceive a world around me roughly as Hume and Democritus conceived it, what we see and perceive is not the world, it is a sort of representation of part of it, the most escapes our perceptions and is unintelligible. The houses, the trees and the streams do not exist outside of us: they are configurations substantially attributable to the mechanistic model of Democritus, which has in itself an excellent predictive power. By changing the finalities (and man can to move away from the search for the satisfaction of instincts) or by changing the environment, the brain may no longer be capable of predictive activity because it may not have suitable sense organs to grasp the causes in the new environment and predictive models that derive from other environments may be inappropriate. Is it reasonable to observe the atoms of modern physics with photons? Do atoms cast shadows? Do they reflect the light? Is it reasonable to think of elementary particles as Democritus' atoms, small pebbles with hardness, which move in rectilinear motion? Do you understand their motion by observing them with photons?

The movements that we see are indicators of who knows what transformations happen in our environment, the rectilinear ones are indicators of the most usual transformations, so usual that the visual system has given itself physiological apparatuses to detect them and they leading to predictable outcomes. Also euclidean space is an abstraction that we perform on the visual field, the one in which the images of houses and trees are located. It makes no sense to think at the euclidean space as a physical reality. Einstein showed that at high speeds, to which evolution has not accustomed us, euclidean space does not form the basis of a good predictive model. I am not saying that physical reality lies in the Riemann's space, it is just another a representation. Furthermore, space intended as a visual field does not contemplate zero or infinity. Any consideration aimed at extrapolating the space towards these entities leads only to absurdities such as the paradox of Zeno in the case of zero or Cantor's ideas, about the part and the whole in the case of infinite.

Physics's claim to understand the world, the universe, the being, the whole,.... that you want to say, cannot be realized by designing artificial sensors or a new brain: we would not know what to look for, we would need another evolution that, by trial, adapted the senses and brains to the new unknown environment and for new ends. Consequently, I believe it is impossible to write an organic theory of the physics of the atomic and subatomic world, while I believe it is possible to build an

artificial brain, of course in the epistemological limits of our brain. In fact, in the human brain there are no quantum aspects: every organ, every current, every fluid inside it involves the involvement of millions of atoms for which the mechanistic model can be applied, which has given excellent results in classical physics.

These conversations have been for me a moment of rest within a period when I am attempting the mechanization of natural language. Trying to understand how the brain runs and to make an artificial brain has been the purpose of my life. I am aware that this is a work in which only a genius will succeed, but mine is not immodesty: loving a sport and playing it does not mean presume to be champions.