

Dear readers:

The philosophy of Science is a product of the 20th century, but many authors contributed significantly to consolidate the very concept of science; I share with you some data that will allow us to strengthen acting as researchers.

One of the philosophers that has great importance until our times is Archimedes who was born in Syracuse - Sicily, (287-212 BC), he is considered an eccentric genius and many of his inventions are currently the foundation of many developments. scientific and technological.

In the second half of the 16th century (1564-1630) Galileo Galilei, who bases his actions on a very significant phrase: «It seems to me that those who only base themselves on arguments of authority to maintain their affirmations, without looking for reasons to support them, act in an absurd way. I wish I could freely question and answer freely without adulation. That's how the one that follows the truth behaves"; he always resorts to nature to confirm his conclusions previously deduced from a reasoning based on purely theoretical hypotheses, it is the beginning of the scientific method of investigation.

In that same century, another very influential astronomer and philosopher, Johannes Kepler (1571-1630), with the discovery of planetary movements, defined the so-called Kepler laws; he also made contributions in the field of optics, enunciated a first satisfactory approximation of the law of refraction and analyzed the geometric aspect of various optical systems.

In the seventeenth century Isaac Newton (1642-1727) made fundamental discoveries in the field of mathematics and optics, the contributions generated by this philosopher support the entire analysis of heat transfer that supports the development of technology for the use of energy. thermal energy.

Descartes (1596-1650) states: «In our search for the direct path to truth, we should not deal with

objects for which we cannot achieve a certainty similar to those of the demonstrations of arithmetic and geometry», it is required to implement procedures that guarantee reliability of the measured data to give reliability to the proposed models.

Claude Bernard (1813-1878) maintains, among others, that observation is the pure and simple verification of natural phenomena as they appear to the senses, while experimentation is the verification of phenomena created by the experimenter.

The experimental method, as a scientific method, rests entirely on the experimental verification of a scientific hypothesis.

Popper (1985) states that the scientific method considers the formulation of innovative ideas and submitting them to the most reasonable, rigorous and effective possible refutations; determines the trial and error method that consists of proposing bold hypotheses and exposing them to the most severe criticism to try to determine a mistake if it exists.

Another current philosopher who has generated great contributions in the scientific method is Mario Bunge (2007), he explains that an efficient technology is based on hypotheses of well-confirmed mechanisms, for this processes are required that are part of a specific system which he calls materialism. systemic; he calls the system a complex object whose parts or components are held together by links of some kind, whether they are logical or material. The bridges that are generated between theory and fact can be described as the hypothetico-deductive method where, first, the observable consequences of the theory are deduced, then empirical data are obtained, these are confronted with predictions and, finally, The theory is evaluated, it indicates that it contains an important part of truth, but that it is also seriously flawed since the theories do not imply such observations without further ado and, consequently, the data cannot be contrasted directly with the relevant empirical data.

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