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## **Is there a methodology unique to western science? A Critical investigation from the philosophy of science**

In order to answer this question, we have to go back to post-renaissance Europe. There we come across two contemporary philosophers of science, namely, Francis Bacon (1561 – 1626) and Galileo Galili (1564 – 1642). Bacon advocated the method of induction as the method of science. Bacon belonged to the philosophical tradition called Empiricism, according to which sense experience is primary in gaining knowledge.

As against this method of induction advocated by Bacon, his contemporary Galileo proposed the method of Hypothetico-Deduction. According to this method scientists should start with a hypothesis and then deductive reasoning could lead him to predictions. Galileo belonged to the philosophical tradition called Rationalism, according to which the mental faculty is primary in gaining knowledge.

Even though Bacon belonged to the empirical tradition of philosophy, the strongest critique of Bacon's method of induction came from the most prominent Empiricists of all, namely David Hume (1711-1776). Despite these criticisms, the above mentioned two methodologies of Bacon and Galileo stood out prominently as answers to the question in the title during the whole period of three centuries, i.e. from 17<sup>th</sup> century to 19<sup>th</sup> century A.D.

The next major intervention regarding the methodology of science occurred at the beginning of 20<sup>th</sup> century through a group of intellectuals called Vienna Circle. The Vienna Circle created a tradition (or school) of philosophy namely, Logical Positivism. Logical Positivists also advocated the method of induction as the method of science but it was a more sophisticated version of inductivism. Logical Positivism dominated the scene during the first half of the 20<sup>th</sup> century, but every tenet of Logical Positivism was demolished by the subsequent developments in the philosophy of science.

The next important philosopher of science to emerge was Karl Popper (1902-1994). He advocated the method of falsification as the method of science. Popper's method of falsification too, encountered serious drawbacks. Later philosophers of science claimed that Popper's method of falsification was too simple and not justifiable in the actual practice of science.

Thomas Kuhn, the American philosopher of science marked a turning point in the 20<sup>th</sup> century philosophy of science through his major work, *The Structure of Scientific Revolutions* (1962). Kuhn did not advocate any method for science. He introduced a number of important concepts to the philosophy of science namely, paradigm, normal science, revolutions in science, and incommensurability.

His contemporary Paul Feyerabend (1924-1994), a Switzerland born philosopher was more radical than Kuhn. Feyerabend in his classic, "Against Method" (1975) repudiates the very idea of a scientific method. Both on grounds of logic and history, he questions the belief that there is something called the method of science which distinguishes science from the other knowledge systems.