

## History of Scientific Thought

### Topic 1

Sumerian Mythology / Astronomy

Egyptian Medicine

Indian Mathematics

Ancient Greek Arkhe Quest

Pythagoras

Euclides

Aristotle Physics / Metaphysics

Alchemy

Galileo

Newton

Einstein

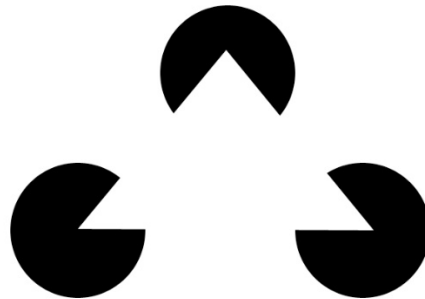
Hawking

Higgs

What is common to all these historical examples in the name of scientificity? What is the difference that will consider the approaches that are accepted as unscientific and which will be excluded from the history of scientific thought?

Where do we look for the History of Scientific Thought? What are we looking for? How do we know that what we find is what we are looking for?

WHAT IS FIXED IN THE THEORY AND APPLICATION (PRACTICE) OF SCIENCE IN CONTINUOUS CHANGE?  
  
WHAT MAKES THIS A CONTINUOUS INTERVENTION WITH THE VISIBLE RADICAL CHANGES IN THE FOCUS POINT IN THE DETAILS?



Is there a triangle in the figure above? How do we see it, if any? There are no three lines drawn! When the simulation is established, when we look at the history, where and how do we see the 'scientificity' quality?

What is common to 'scientificity' in all these historical examples? What is the difference that will consider the approaches that are accepted as unscientific and which will be excluded from the history of scientific thought?

## **History of Scientific Thought**

### *Topic 1*

After the scientific revolution in the 16th and 17th centuries, 'scientific' knowledge came to the fore in the 18th century and especially in the 19th century. Although the origin of this kind of knowledge can be determined far backwards in retrospective history of science readings, a 'new' form of knowledge, as it was grasped in the 19th century, has been the subject of epistemology. As a new 'knowledge production subject', the scientist seemed to say that if he used the right methods, everyone could create / produce knowledge. And the validity of any knowledge put forward by any scientist could be tested by everyone else, simply by repeating empirical observations and using data. Since this method of producing knowledge seems to be able to develop practical inventions at the same time, it has been claimed to be a particularly powerful way of knowing.

Science, as an attribute of modern times (modernism), enjoys great reputation. It is a widely shared belief that there is a 'something special' in science and its specific method that does not make other knowledge claims. The 'scientific' or scientific qualification of a claim or form of reasoning or research after the 19th century is an implication of validity or a particular type of reliability.

### **What makes science so special?**

#### **What is the 'scientific method' that leads to reliable results?**

#### **What is the basis of science and the authority of the scientist?**

The philosophy of science also has a history. The first stage, which prepares the second stage, which can be seen as a kind of philosophical encounter with modern science, can be called the search for 'the right method' or the study of bringing the method to 'science'. It is possible to start this first stage with Francis Bacon in the early 17th century, arguing that the aim of science is to improve the fate of man on earth, and that this goal can be achieved by collecting observations organized with facts and deriving theories from them. In the words of Bacon, "if we want to understand nature, we should resort to nature, not Aristotle's writings."

From the 1920s to the mid-1980s, a different area of discussion arose in philosophy. This field is the philosophy of science. The philosophy of science is a relatively new discipline. Philosophy of science is an activity on science; however, its area and scope should be well defined. The philosophy of science is an activity that directly examines the quality of science, its scope, the tools it uses while producing, the nature of these tools, the theories of science and their nature, with the tools provided by philosophy. Therefore, it is a purely rational, intellectual

## History of Scientific Thought

### Topic 1

pursuit. It emerged as a research area, especially as of the 18th century. It is claimed that this justification stems from the nature of science, rather than the walking of philosophy. As a result of the intervention of philosophers to the problems that arise in the progress of science, this discipline was born.

The 18th century "Enlightenment" is seen as the "Scientific Revolution" century and a century in which new branches of science emerged. There have been great advances and changes in philosophy and science. Accordingly, new sciences have emerged. These are disciplines that do not fit the disciplines defined in the historical process. According to Aristotle, science is an explanation of causes, and the information presented here is apodeic. New disciplines such as sociology, history and psychology are incompatible with the traditional definition of science. In this context, it has been the subject of debate whether these disciplines are science. Thus, the first problem arose out of the need for science to be redefined.

Science has an established characterization in the historical process. It is a common idea that science is advancing. Science is a high-level intellectual activity that man belongs to. Why progress belongs only to this area? The second problem is built on this question.

The answers to these questions formed two big phrases:

The first group advocated the argument that the correct solution of these problems is to examine the outstanding science products that have been introduced in the historical process. (HISTORY OF SCIENCE).

The second group advocated the argument that the way to answer these questions correctly is through the examination of the concepts science uses, the method it uses, and the quality of the knowledge it produces. (PHILOSOPHY OF SCIENCE)

The 18th century is also a point of transformation in philosophy. Until this period, important works have been given in the fields of ontology, epistemology and values, which are the three main disciplines of philosophy; however, epistemology began to stand out from the 18th century. In the 18th century, there was a development that disrupted the traditional march of philosophy: The sciences showed great improvement and they revealed epistemological responses that were more important than epistemological questions. Thus, borders began to be drawn between philosophy and science. Since science is considered to be an ending with progress, the desire to embed this progress in human activities other than science has arisen. The concept of progress has emerged as a serious problem area.

## **History of Scientific Thought**

### *Topic 1*

Can philosophy and other disciplines progress? If progress is possible in these disciplines, how will this happen? It is a proposal to study outstanding examples of science and to apply its result to disciplines; however, this was not sufficient. At the center of all these studies is to define science epistemologically correctly.