

Structure of scientific revolution

[History](#), [Revolution](#)



Science is a branch of knowledge. It involves a systematic observation of phenomena. Other than systematic observation, science employs empirical approaches to prove its principles. Kuhn (1970) states that, “ All the techniques for making well arranged descriptions, findings correlations and preparing predictions belong to the field of scientific practice. ” (p. 9).

Scientific revolution is therefore a philosophical term that traces its origin from as early as 18th century.

The structure of scientific revolution constitute of controversial concepts about the scientific nature and the reason for its special success. Historical background connotation is an important component of scientific revolution. It details continuously and usually chronologically documentation of important event. The historical backing of scientific phenomena enhances and promotes understanding. This statement is facing opposition across the world based on the inconsistencies of historical backing on scientific implementation.

Kuhn (1970) expresses his dissatisfaction with this link in his essay. “ in some part it is an attempt to explain to myself and to friends how I happened to be drawn from science to its history in the first place. ” (Kuhn 1970, p. 55) Scholars such as Alexander Koyre, Emile Meyerson and Anneliese Maier show the disparity that existed between the periods of canon scientific throughout from the perception of the current scientists. This therefore de links the chronological development process of scientific revolution.

The question about the history of scientific advancement remains unknown and hanging. Between the year 1958-1959, Kuhn, was the center for

advanced studies in Behavioral sciences. This community was predominantly dominated with social scientists. During this time, it was evident that the difference between the communities that claimed familiarity to social science and the natural science. The issue of concern was the nature of legitimate scientific problem and methods. Acquaintance and history generated confusion and doubt about the natural sciences practitioners.

This is attributed to unsatisfactory historical linkage that is supposed to create familiarity with the natural science. “ Yet, somehow, the practice of astronomy, physics, chemistry or biology normally fails to evoke the controversies over fundamental that today often seem endemic among say psychologists or sociologists. ” (Kuhn 1970, p, 58) In the normal science, the most striking features experienced is their narrow objective to produce major novelties conceptual or phenomenal. Result of these kind of research are usually small compared with the range imagination can perceive and conceive.

Projects with results outside that narrow range are considered as failure. For example in the eighteenth century, less attention was paid to the experiments that examined electrical attraction. This is because they produce neither consistent nor simple outcomes. They could not articulate their paradigm. They therefore were considered as mere facts, unrelated and unrelatable to the electrical progress result. (Kuhn 1970, p 97) Normal science objective is not major substantive novelties. History provides a foundation for the future.

The normal science was considered by scientist as significant since it gathered information to the scope, precision and reliability upon which the paradigm could be applied. Scientists never put value on the years; a development such as spectrometer goes through. These activities are always spurred by scientists since they are more routinal and repetitive of procedures. One of the things that a scientific community value is the criteria for choosing problems. Traditionally the normal science took it for granted. The man who builds an instrument to determine optical wave lengths must not be satisfied with a piece of equipment that merely attributes particular numbers to particular spectral lines. ...on the contrary he must show by analyzing his apparatus in terms of the established body of optical theory. " (Kuhn 1970, p, 101) History produces a decisive transformation in the field of science. Historical data forthcoming are constantly sought and scrutinized to respond mainly to unhistorical stereotype derived from textbooks.

These books always imply that the content of science is uniquely outlined by laws. Theories and observations described under their contexts. Textbooks indicate that scientific methods are manipulative and textbooks data are logically gathered. This consequently has resulted to profound implication about the development and nature of science. Scientific information is gathered systematically and at time in a piecemeal manner. History of science thus has become instrumental in documentation of successive increments and obstacles facing the process of accumulation.

Thus the historians determine scientific information and reference time point of contemporary scientific fact, theory and law was discovered. The historian

also clarifies the myth and superstition that surround the rapid accumulation of constituents of the modern science information. (Otto, 1971, 64)

Historians face difficulties to fulfill the functions of development by accumulating assigned information. As individuals of incremental process, they have realized that additional research complicate response to question such as history of oxygen discover.

A few of historian therefore tend to belief that science does not develop by accumulation of knowledge. They also confront growing difficulties in distinguishing the components of past scientific belief and observation from their predecessors. In depth study of scientific concepts brought confidence on current views of nature. “ If out of date belief are considered as a myth then they can be developed by the same sorts of means held for the same sort of reasons that now lead to scientific knowledge” (Otto, 1971) 64.

If such myths on the other hand are considered as science then it incorporate set of beliefs quite incompatible with the one we hold today. Historical research in science is faced with problem of isolating individual's inventions and discoveries. It also provides a profound ground for doubt on cumulative process through which individual contributions to science were compounded. The uncertainty that encompasses the historical development of scientific development leads to insufficiency of methodological directives.

This dictates a unique substantive conclusion to many scientific questions. It can therefore mislead as it may legitimately arrive to a number of incompatible conclusion. The early stage of scientific development was characterized with competition that arose due to distinctive view of nature

derived from roughly compatible dictates of scientific observation and methods (Otto, 1971) 66. Normal science a concept that is common to many scientists is anticipated based on the assumption that the scientific community know what the world is like.

This often suppresses fundamental novelties because of its subversive nature with basic commitment on the other hand, normal research pieces of equipment fails to perform in anticipated manner. This results in anomaly, which cannot be considered equally with professional expectation. With regard to the above discussion, normal scientific tradition that emerges from a scientific revolution is not only incompatible but is also incommensurable with research paradigm that has gone before. Thus the history of modern physics cannot legitimately be viewed as one of a systematic cumulative growth of knowledge.