

Lesson 4: The Technical Meanings of Science and Philosophy

Introduction

In the first lesson it was indicated that the expression “philosophy” was applied from the beginning as a general term for all the true sciences (as opposed to conventional sciences), and in the second lesson we indicated that in the Middle Ages the realm of philosophy was extended to include some of the conventional sciences such as literature and rhetoric.

In the third lesson we learned that the positivists set scientific knowledge in opposition to philosophical and metaphysical knowledge, and they considered only the empirical science to be worthy of the name “scientific”.

According to the first meaning, which was also prevalent in the Islamic period, philosophy has various divisions, each of which is called a special science, and naturally there was no conflict between science and philosophy. However, the second meaning appeared in Europe during the Middle Ages, and was abandoned by the end of that period.

According to the third meaning, which is presently current in the West, philosophy and metaphysics are set in opposition to science. Since this meaning also has gained currency to some extent in Eastern countries, it is necessary to explain something about science, philosophy and metaphysics and the relations among them. Additionally, the divisions of the sciences and their classification will be mentioned.

After the treatment of this topic, we will remark on some especially important points about equivocation, differences in meaning and the technical meanings of a word, neglect of which is a cause of much confusion and fallacy.

Homonymity

In all languages (as far as it is known), words can be found each of which has a literal meaning, a commonly accepted meaning and a technical meaning. This is called homonymity, *ishtirak al-lafzi*. For example, in Farsi, the term *dush* has the meaning of 'last night', 'shoulder' and 'shower', and the term *shir* is used for 'lion', 'milk' and 'faucet'.

The existence of homonymity plays an important role in literature and poetry, but in science, and particularly in philosophy, it brings about many difficulties, especially since the different meanings for a word are often so close to each other that distinguishing them becomes difficult. Many errors are made due to this sort of homonymity, and occasionally even authorities fall into this trap.

For this reason, some of the great philosophers, such as Ibn Sina, obliged themselves to clarify the meanings of various terms and differences among their technical senses before engaging in precise philosophical discussion in order to prevent confusion and error. By way of example we will mention a case of homonymity which has many applications and often leads to misunderstandings, and that is the term *jabr*.

The literal meaning of *jabr* is to compensate or remove a deficiency, later it was used with the meaning of "bone setting", and perhaps it assumed this meaning because bone setting is a way of compensating a kind of deficiency, and possibly it was first used for bone setting and later was generalized to the compensation of any sort of deficiency.

A third meaning of this word is to force or place under pressure, and perhaps it assumed this meaning as a result of generalization of a requirement of bone setting, that is, since bone setting usually requires that the broken member be placed under pressure in order that the bone may be fit together, this meaning was generalized to include any pressure exerted by someone on another which forces the other to do something involuntarily.

Perhaps this was first used for cases of physical pressure and then for cases of mental pressure, and finally this concept was expanded to include any sort of feeling of pressure, even when not brought about by another person.

Up to this point we have reviewed the concept of *jabr* from the perspective of its literal and commonly accepted meanings. Now we should introduce the technical meaning of this expression in science and philosophy.

One of the scientific meanings of *jabr* is that which is used in mathematics, that is, a kind of calculation in which instead of numerals letters are used, and perhaps this meaning was coined because in algebraic calculations positive and negative quantities compensate each other, or because the unknown quantity on one side of an equation becomes known by attending to the other side or by transferring its

members, which is a kind of compensating.

Another technical meaning is related to psychology, which is used as the opposite of free will. Similar to this is the problem of 'free will and determinism' which is studied in theology. This term is also used in ethics, law and fiqh, the explanation of which would take too long.

Since the distant past the concept of jabr (as opposed to free will) has been confused with certainty, necessity and philosophical necessity (wujub falsafi). In reality, the term was mistakenly used for certainty and necessity, as in foreign languages "determinism" is viewed as equivalent to it.

In conclusion, the illusion is created that every case in which the necessity of cause and effect is accepted, there cannot be free will, and conversely, the denial of necessity and certainty are taken to imply free will. The effect of this illusion on several philosophical problems is manifest, among which is that the [early] theologians denied causal necessity in the case of voluntary agents, and following this, they accused philosophers of failing to consider God the Exalted as voluntary.

On the other hand, the jabriyyun (determinists) considered the existence of a certain fate as a reason for their own position, and opposing them, the Mu`tazilites, who believed in the free will of man, denied that there is a certain destiny. Although the certainty of destiny is irrelevant to jabr, in reality these disputes, which have a long history, occurred because of confusion between the concept of jabr and that of necessity.

Another unfortunate example is that some physicists have raised doubts about or denied causal necessity in the case of some phenomena of microphysics, and opposing them, some Western theists have attempted to prove the existence of the Will of God on the basis of the denial of necessity for these phenomena, imagining that the denial of necessity and rejection of determinism in these cases would imply the proof of a free power.

In conclusion, the existence of homonymity, especially in cases, in which the meanings are near to or similar to one another, brings about problems in philosophical discussions. These difficulties are redoubled when in a single science a term has many technical meanings, as in the case of the expression 'intellect' ('aql) in philosophy, and the terms 'essential' (dhati) and 'accidental' ('aradhi) in logic. Therefore, the need to explain meanings and to determine the intended meaning in every discussion is clear.

The Technical Meaning of "Science"

Among the expressions which have various and confusing applications is the term 'ilm (science, knowledge). The literal meaning of this word and of its synonyms in other languages, such as danesh and danestan in Farsi, are clear and require no explanation; but 'ilm has various technical meanings, among which the most important are:

1. Certain belief corresponding to reality, which is the opposite of simple and compound ignorance, even if used in a single proposition.
2. The set of propositions considered to be relevant to one another, even if the propositions are singular and specific. And it is in this sense that 'ilm is also applied to the science of history (knowing specific historical events), the science of geography (knowing the specific conditions of different areas on the globe), the science of rijal [the study of the transmitters of hadiths] and biography.
3. The set of universal propositions which are considered pivotal in some field, each of which is applicable to numerous instances, even if these propositions are conventional, and it is in this sense that 'ilm is applied to conventional as opposed to 'real' (haqiqi) sciences, such as vocabulary and grammar. However, singular and specific propositions, such as those mentioned above, are not considered 'ilm in this sense.
4. The set of universal 'real' (haqiqi) (i.e. not conventional) propositions which are pivotal in some field. This sense includes all the theoretical and practical sciences, including theology and metaphysics, but it does not apply to singular and conventional propositions.
5. The set of real propositions which can be justified by sense experience. This is the very sense in which the positivists employ the term, and on this basis the non-empirical sciences and learning are not considered to be 'ilm (science).

The restriction of the expression 'science' ('ilm) to the empirical sciences is not a matter of controversy as far as this merely concerns the coining of terms and fixing terminology, however, the fixing of this term by the positivists is based on the particular view of those who imagine that the scope of certain and real human knowledge is limited to sensible and empirical things.

They consider thinking which goes beyond this to be meaningless and fruitless. However, unfortunately, this sense has come to prevail across the surface of the earth, according to which science is set in opposition to philosophy.

The scope of certain knowledge, the refutation of positivism and the proof that there is real knowledge beyond the realm of sense and experience shall be postponed until the discussion of epistemology. We next turn to the explanation of the concept of philosophy and metaphysics.

The Technical Meaning of "Philosophy"

Thus far we have become acquainted with three technical meanings of philosophy: the first meaning includes all of the real sciences; the second meaning additionally includes some of the conventional sciences; the third meaning is specific to non-empirical knowledge and is used for the opposite of science (in the sense of empirical knowledge).

In this sense, philosophy includes logic, epistemology, ontology (metaphysics), theology, theoretical psychology (as opposed to empirical psychology), aesthetics, ethics and politics, even if in this area there are more or less differences of opinion and sometimes it is employed only for first philosophy or metaphysics, and this may be considered a fourth technical meaning of “philosophy”.¹

The expression “philosophy” also has other technical uses, which usually occur modified by an adjective or a genitive construction, as in “scientific philosophy” and “the philosophy of the sciences”.

Scientific Philosophy

This expression is also used in various ways.

A. Positivism: Auguste Comte, after condemning philosophical thought and metaphysics and denying universal rational principles, divided the basic positive sciences into six fundamental branches, each of which has its own characteristic laws, as follows: mathematics, astronomy, physics, chemistry, biology and sociology.

He wrote a book called Course of Positive Philosophy in six volumes, and he treated the totality of the sixfold science in accordance with his so-called positive method. He devoted three volumes of the set to sociology, even though the basis of this positive philosophy lies in some dogmatic non-positive claims.

In any case, the content of this book, which is in fact program for the investigation of the sciences and especially the social sciences, is called positive philosophy, or scientific philosophy.

B. Dialectical Materialism. Marxists, contrary to positivists, emphasized the necessity of philosophy and the existence of universal laws. However, they hold that these laws are obtained from the generalization of the laws of the empirical sciences, not from rational and metaphysical thought.

Hence, they called the philosophy of dialectical materialism “scientific philosophy”, for, according to their own claims, it is obtained from the achievements of the empirical sciences, even if it is no more scientific than the philosophy of positivism.

Basically, scientific philosophy (if “scientific” is taken to mean “empirical”) is an oxymoron, such as “a clean shaven man with a beard”, and in comparative discussions, their claims have been subject to criticism.

C. Another sense of scientific philosophy is synonymous to “methodology”. It is clear that every science depending on its sort of problems requires its own specific methods of research and verification.

For example, the problems of history cannot be solved in the laboratory by means of the analysis and synthesis of various elements, and likewise, no philosopher can establish the year in which Napoleon attacked Russia or whether he was victorious or defeated by means of philosophical and mental analysis

and inference.

These sorts of problems are to be solved by means of review of the relevant documents and the evaluation of their validity. In general, science in the general sense may be divided in to three types according to the methods of research and inquiry used for solving their problems: intellectual sciences, empirical sciences, and narrative and historical sciences.

A science by the name of 'methodology' has appeared in order to review the kinds and levels of the sciences and to determine the general and specific methods of each of the three types of science, which is occasionally called scientific philosophy, as it is also sometimes called practical logic.

1. Cf. Falsafah 'Umumi ya Ma ba'd al-Tabi'ah, the Farsi translation of Paul Foulquie, *Traité élémentaire de philosophie*, (Paris: 1951), Vol. 3, *Métaphysique*, Ch. 6, "The Fundamental Problems of Metaphysics"; *Khulasah-ye Falsafah*.

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