The Nature of Scientific Philosophy

and Its Subject Matter

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The main task:

To justify the view on philosophy as a real science by elucidating its nature, and by defining its subject-matter.

An important caveat: The term "science" is to be understood in a very broad sense ("Wissenschaft") covering not only natural sciences, social sciences and humanities (i.e., areas with a specific empirical content), such as physics, chemistry, biology, geography, sociology, psychology, political science, linguistics, history, music theory, economics, etc., but also purely theoretical (a priori) disciplines dealing with abstract objects, such as mathematics and logic.

Broadly speaking, science is what brings knowledge (justified true belief) which goes beyond everyday understanding.

The key questions to be addressed:

1. Is philosophy a science?
2. If it is a science, what is its nature?
3. Does philosophy has its own subject-matter, or it is some activity without a specific domain?
4. If there is a specific subject-matter of philosophy, how it can be defined?

Quick answers:

1. Yes, philosophy is a science.
2. It is a pure a priori science about abstract entities of a certain kind.
3. Yes, philosophy has its own subject-matter.
4. This subject-matter can be defined as pure quality as such.

Contents

The idea of philosophy as a distinct science

- The controversial issue of whether philosophy is a science has been at the center of debates at least since Kant's groundbreaking inquiry into the possibility of scientific metaphysics.
- Philosophy is often treated not as science, but as a special branch of human culture similar to art, literature and religion.
- Views in favor of the scientific status of philosophy are often advocated indirectly (negatively):
  - philosophy is not really art, literature, or religion;
  - thus, there is no other option but to treat philosophy as a science.
- This indirect way of arguing may play an important supportive role, but cannot be completely satisfactory.
- To justify a scientific character for philosophy, it is desirable to formulate a positive definition that directly explicates the nature of philosophy and delimits its field of study.

A comparison with mathematics

- To explain the nature of philosophy as a distinct science with its own subject-matter, it appears quite promising to compare (and correlate) philosophy to mathematics.
- Such a comparison proves useful for revealing specific features of philosophical knowledge.
- Philosophy and mathematics share certain important similarities which are crucial for their scientific status:
  1. the nature of math. and philosophical concepts and judgments;
  2. the essence of mathematical and philosophical entities;
  3. the notion of truth in both fields;
  4. some basic principles for constructing mathematical and philosophical theories and conceptions.
- There is a fundamental duality between mathematical and philosophical knowledge, and thus, one can derive a definition of the latter by dualizing the definition of the former.

The argument:

Mathematics is a science.

In some crucial and relevant (for being a science) aspects philosophy shares certain features with (is very much alike) mathematics.

Philosophy is a science

Pure a priori knowledge (mathematics)

- The concepts and statements of mathematics are usually considered to represent a paradigmatic example of what, following Kant, is commonly referred to as pure a priori knowledge.
- A judgment is regarded as a priori if its truth can only be established by rational, non-experiential means alone, with no recourse to empirical inquiry.
- Clearly, theorems of geometry, arithmetic equations, and algebraic expressions are verified by purely theoretical (logical) means.
- The process of such verification (mathematical proof) does not require any factual information about “physical world”.
- Thus, mathematical judgments have nothing to say about the states of affairs in this world, and we do not need any empirical data to establish the truth of these judgments.

Pure a priori knowledge (philosophy)

- Even though philosophical reasoning is often far from the perfection and rigor of mathematical proof, the judgments of philosophy in certain important respects are largely analogous to those of mathematics, inasmuch as they are also a priori in nature, and are validated by a purely theoretical reasoning.
- From this perspective, philosophical knowledge is sometimes characterized as being attainable merely by “armchair methods”.
- Of course, any science includes a purely theoretical component represented by a body of general laws and their consequences.
- However, proper judgments of pure mathematics and theoretical philosophy, as distinct from the other sciences, never refer to any empirical domain and, as a result, are deprived of the so-called “observation sentences” available to other scientific disciplines.

Abstractions of the first level

- Pure a priori judgments cannot include empirical notions, which are direct generalizations of observed objects and their properties.
- Moreover, such judgments cannot deal with concrete notions of any kind which comprise concrete things, situations, and processes of physical reality or even idealizations thereof.
- Even though any empirical science (including its theoretical part) deals with abstract notions, many of such notions still are empirically loaded – for example, such notions of theoretical physics as “elasticity”, “conductivity”, and “speed”.
- Such notions of empirical sciences introduce abstract objects of a certain kind that are obtained by converting some (empirical) properties and relations of concrete (physical) things into certain “objects of thought”. These objects of thought can be called abstractions of the first level.

Abstractions of higher level

- By contrast, the notions of mathematics and philosophy represent abstractions of a higher level performed over the (abstract) properties and relations possessed by some abstract objects of a lower level.
- For example, the mathematical notion of number can be obtained by converting the abstract property of cardinality into an (abstract) object, whereas sets exhibiting this property are by themselves abstract objects of some kind.
- Likewise, in philosophy, the notion of justice can be introduced as an abstraction over certain property (a virtue) that can be possessed either by persons (Aristotle) or by social institutions (Rawls), which themselves are considered to be abstractions of a certain kind.
- Thus, mathematical and philosophical objects have no direct connection to empirical reality, they are entirely non-empirical entities.

Identity criteria for math. and phil. entities

- This means in particular that identity criteria for such objects are essentially non-empirical, and comprise characteristics that by their very nature cannot be collected through the sensory system.
- For instance, the identity criteria for numbers in mathematics consist in the equinumerosity of the corresponding sets: the number of elements of set X is identical to those of set Y if and only if the elements of these sets are connected by a one-to-one correspondence (Hume's principle). The latter is an abstract mathematical relation that cannot be seen or somehow sensed.
- Similarly, in philosophy the identity criteria for substances consists in their having the same attributes (according to Spinoza, God and Nature are one and the same substance by virtue of possessing the same attributes). Again, these attributes are completely non-empirical: "The intellect perceives them of a substance as constituting its essence".

The problem of truth (mathematics)

- The problem of truth in mathematics and philosophy is treated in a similar way. This particularly concerns the theories of truth that can be applied to the analysis of judgments in both fields.
- The correspondence theory of truth (the truth of a sentence is established by correlating it with a non-linguistic reality) is hardly applicable to mathematics. For mathematical judgments, it is by no means clear what kind of “reality” should be considered, and what the procedure of such a correlation could be.
- The coherence theory of truth is more applicable to the analysis of mathematical theorems than the correspondence theory. Indeed, every such theorem holds only with respect to some mathematical theory. The statement “the angle sum of a triangle is 180°” is true in Euclidean geometry but not true in hyperbolic geometry.

The problem of truth (mathematics)

- Moreover, a mathematical theory as a whole is normally based on some stock of basic postulates (axioms), which are usually accepted by agreement, and the truth of which is thus grounded by a conventionalist theory.
- Thus, the truth of mathematical statements is based on a certain combination of coherence and convention.

The problem of truth (philosophy)

- The situation with philosophical judgments and conceptions is very similar. By way of example, consider a typical philosophical statement: “Space is nothing but the form of all appearances of outer sense. It is the subjective condition of sensibility, under which alone, outer intuition is possible for us” (Kant).
- This statement makes sense only within a certain philosophical conception in which space is treated as an a priori form of sensibility.
- Whereas the very possibility of finding such forms in “empirical reality” seems highly problematic, one can only postulate them (i.e., accept them by agreement) and proceed further with the consequences of the accepted postulates.
- Thus, philosophical judgments are supported by a similar (to mathematics) combination of the coherentist and conventionalist theories of truth.

An axiomatic-deductive framework

- There are also certain important similarities in the general design of mathematical and philosophical conceptions. Mathematical knowledge can typically be represented in the form of an axiomatic theory.
- By developing their conceptions, philosophers essentially stick to a similar canon. A philosophical system (theory) is usually grounded explicitly or implicitly on some collection of primitive notions (categories) taken without definition. By means of these notions, a body of fundamental statements (principles, postulates, etc.) is formulated, on the basis of which the entire conception is then developed.
- Of course, the mathematical standards of rigour are hardly (if ever) attainable in philosophy. But generally, an abstract model of evolving philosophical ideas is well within the parameters of a pure theoretical inquiry.

An axiomatic-deductive framework

- In mathematics and philosophy the construction, development, and justification of scientific knowledge are performed within an axiomatic-deductive schematism broadly conceived.
- Mathematics and philosophy are the only sciences that have no methodological tools other than logical and conceptual analysis. Experimental methods are alien to both, as opposed to other disciplines.
- From this perspective, the similarity between mathematics and philosophy is much more important than the evident difference, which is that mathematics typically deals with explicitly formulated axioms and rigorous deductive procedures, whereas initial postulates in philosophy are often assumed only implicitly, and the process of inference is accomplished mainly by means of informal argumentation.

A preliminary conclusion

Mathematics is a pure a priori science, which deals with the high-level abstractions, and studies pure (ideal) entities by means of an “armchair methodology”. By evaluating its judgements mathematics employs a combination of coherentist and conventionalist conceptions of truth, and develops its own conceptions within an axiomatic-deductive framework.

And so is philosophy.

Two approaches to defining philosophy

- Consider two major approaches to defining philosophy as a theoretical discipline.

(1) According to the first approach, which can be called a methodological approach there is no such thing as the subject-matter of philosophy, and thus its scientific role is a purely methodological one, which determines its place in the system of scientific knowledge.

(2) The countervailing view (a subject-matter approach) is that philosophy has its own specific subject-matter, just as any other scientific discipline.

The methodological approach

- This approach can be illustrated by a conception elaborated by the Vienna Circle, where philosophy was considered to be a certain kind of activity “through which the meaning of statements is revealed or determined” (Moritz Schlick).
- Ludwig Wittgenstein: “Philosophy aims at the logical clarification of thoughts. Philosophy is not a body of doctrine but an activity. A philosophical work consists essentially of elucidations. Philosophy does not result in ‘philosophical propositions’, but rather in the clarification of propositions” (Tractatus, 4.112).
- In this case philosophy is meant to play a merely instrumental role, and thus, turns out to be only a facilitative mechanism for other sciences to achieve their goals.
- Victor Kraft: “When aiming at the scientific status of philosophy, one, in fact, prevents it from being a true science”.

The subject-matter approach: Aristotelian definition

Every science should have its own specific “field of inquiry”, and this field determines the nature and the key features of this science. Thus if we wish to explicate philosophy as a real science, we have to clearly identify its subject-matter.

A classic example: Aristotelian definition of first philosophy as “a science which investigates being as being and the attributes which belong to this in virtue of its own nature” (Metaphysics, 1003a 20-32). This science is “not the same as any of the so-called special sciences; for none of these others treats the universally of being as being” (1003a 23).

Aristotelian definition (merits)

- This definition combines universality with a quest for precision.
- The subject-matter of philosophy is clearly identified here as a certain (abstract) object – being as such.
- Philosophy should deal not with selected parts or particular implementations of this object, but with its general nature.
- Such a combination of definiteness in describing the subject-matter of philosophical investigation with a recognition of its universality is a clear advantage of Aristotle's definition and a move in the right direction.

Aristotelian definition (need for improvement)

- It is not entirely clear what is meant here by “being as being”.
- Is this category used here in a purely ontological sense? If so, we obtain a definition of metaphysics as ontology at the very most, leaving such branches as epistemology, ethics, political philosophy, etc. beyond its scope.
- Thus interpreted, the definition under consideration unjustifiably narrows the subject-matter of philosophy.
- To avoid such a restriction, it has to be assumed that any branch of philosophy should deal with some kind of “being” conceived very broadly (being of mind, social being, moral being, etc.).
- But without further specification of being so conceived the Aristotelian definition turns out to be rather inconcrete.

The subject-matter of mathematics

- Both mathematics and philosophy are pure a priori sciences about the high-level abstract entities. Moreover, they are the only such sciences (logic can be considered as a subdiscipline either of mathematics, or philosophy, or both).
- This resemblance of philosophy with mathematics can give us a clue to explicate the subject-matter of the former by considering the subject-matter of the latter.
- Mathematics in accordance with the classical definition descending from Aristotle, is considered to be the science of quantity.
- Specifically, mathematics studies the pure quantitative properties and relations (aspects, characteristics, dimensions – in short, attributes) of any possible being.

The subject-matter of philosophy

- Given that being of any kind necessarily enjoys both quantitative and qualitative determinacy, one can dualize the above definition of mathematics and arrive at the idea of a science, the subject-matter of which should be the pure qualitative properties and relations of any possible being, i.e., the science of quality.
- As shown above, it is philosophy that, together with mathematics, exhaustively covers the area of pure a priori investigations and, in this respect, philosophical knowledge is complementary to mathematical knowledge.
- Hence, it is philosophy that can be considered to be the required science of quality per se. In this way we can obtain the definition of philosophy as the a priori science of the pure qualitative attributes of being.

The field of philosophical inquiry

- The above definition concretizes the Aristotelian definition by extracting for philosophical inquiry the pure qualitative aspects of being (as being). Importantly, “being” is taken here in the broadest possible sense, comprising not only the actual (real) world and really existing things, but any possible world and all things whatsoever, the existence of which is logically possible.
- According to this definition, philosophy deals with the pure qualitative determinacy of being. This, first, is totally devoid of quantitative characteristics and, second, can be known only by a priori (speculative) “thoughtful examination”. For example, physical and chemical abstractions are in this sense not “pure” and thus do not fall within the scope of the given definition.
- This is in contrast to substance, mind, justice, good, and similar pure qualitative attributes, which, by a “second-order abstraction”, turn into specific philosophical entities constituting the field of philosophical inquiry.

The spectrum of scientific knowledge

- In this way, the role and place of both philosophy and mathematics in a general system of scientific knowledge becomes more transparent.
- This system can be presented as a kind of a spectrum, in the middle of which, complementing each other, two absolutely a priori and abstract sciences are located – mathematics and philosophy.
- Other sciences are posed on both sides along the spectrum line. The further from the center of the spectrum a particular science is located, the less “theoretical” it is, i.e., the more empirical and domain-specific content it has.
- Natural sciences are oriented more toward mathematics because their empirical content is more measurable. Humanities, by contrast, primarily make use of an informal argument and qualitative methodology, whereby they are more philosophically guided.

Résumé

- A comparative analysis of mathematical and philosophical knowledge reveals a profound similarity between mathematics and philosophy as mutually complementary sciences exploring the field of abstract entities that can be comprehended only by purely a priori theoretical inquiry.
- By considering this complementarity, a general definition of philosophy can be obtained by dualizing the traditional Aristotelian definition of mathematics as the “science of quantity”.
- Philosophy can thus be interpreted as an a priori science of the pure qualitative attributes of being.
- In this sense, mathematics and philosophy turn out to be dual sciences, as their definitions can be obtained from each other by interchanging between qualitative and quantitative characteristics.