



«DARIAH-KPHTH Development of the Greek research infrastructure for Humanities DYAS»

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Knowledge and Experience in Logical Positivism

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Introduction

Logical positivism or logical empiricism is a movement that made a significant contribution to philosophical discussions from the 1920's to the 1950's in Europe and United States. It originated with the members of the so called *Vienna Circle*, a group of philosophers gathered around Moritz Schlick who was professor at Vienna University. Members include Rudolf Carnap, Otto Neurath, Hans Hahn, Herbert Feigl and there were also some leading philosophers, logicians and mathematicians who had contact with the circle as Karl Popper, Alfred Tarski, Kurt Goedel and last but not least Ludwig Wittgenstein. A.J. Ayer made the movement popular in England. After the Nazis came into power, many members such as Carnap, Hans Reichenbach and C.G. Hempel emigrated to the USA and played an important role for two more decades in the American philosophical scene. It must be noted that W.v.O. Quine,

arguably the greatest American philosopher of the 20th century, was a pupil of Carnap and Putnam the other great American philosopher was a pupil of Hans Reichenbach.

Why logical positivism or empiricism?

In order to get to know the movement and its variations let's have a look at the text entitled "The scientific Conception of the World: The Vienna Circle" known as the "manifesto" of the Vienna Circle (1929)

The following principles are stated in this manifesto:

- 1. The elimination of metaphysics**
- 2. Empiricism**
- 3. The logical analysis of language**
- 4. The demand for a unified science**

A central concern for logical positivism is to **eliminate metaphysics**. Metaphysical propositions are not false, they are nonsensical (unsinnig). However according to what criterion do these propositions lack meaning?

Here appears the famous *verification principle*: This is the view that the meaning of a proposition is the method of its verification. A proposition has meaning only if there are conditions that if they were met the proposition would be true. (This principle is inspired by Wittgenstein's *Tractatus*). Metaphysical propositions i.e. those about philosophical theories such as idealism or realism, or the ultimate nature of reality, but also about ethics and the meaning of life are meaningless or nonsensical. Thus only empirical (verifiable or falsifiable) propositions and propositions of logic and mathematics i.e. analytical ones are accepted by logical positivists.

It is also obvious how the movement is related to **empiricism**, as the basis of meaning and knowledge are observation sentences/protocol statements, through which language is connected to reality. The proponents of logical positivism do not have to

commit themselves to a unique kind of reality. They could be physicalists or phenomenologists

In order to arrive at those statements, language has to be **logically analyzed**. Only logically simple empirical sentences can be compared to reality and be verified or falsified. Complex propositions are truth functions of simple or elementary propositions.

Logical analysis is also used for the **unification of science**. To this purpose logical analysis has to be applied to the language of the different scientific disciplines. The statements of all these different sciences must be reduced through logical analysis to statements about the immediately given (Schlick) or to statements of a physicalist language, which refers to the physical world (Carnap, Neurath). These elementary or simple propositions arrived at by logical analysis form the ground language of all the sciences. As an example we can mention the language of psychology i.e. concepts about mental states and processes, which can be reduced to concepts of physiology or concepts about behaviour (behaviourism)

The demand for a **unified language of sciences** is connected to the discussion about the difference between natural sciences and humanities, "hard" and "soft" sciences. According to logical positivists all sciences should follow the methodology of the natural sciences, the ideal being physics.

The role of philosophy is not anymore to investigate ontological and epistemological problems, to search about the ultimate nature of reality, but to answer questions on the foundations of individual sciences or on the logic of scientific research and to find connections between the different sciences and their languages. In the logical positivists' view the scientific method is the only valid one for acquiring knowledge and philosophy is just an *ancilla scientiae*. This view can be characterised as *scientific*

This position also explains why the movement adopts the term *positivism*, following Auguste Comte's third and highest stage of knowledge the scientific- positive.

Problems with logical positivism

A very contested part of logical positivism is the verification principle itself:

According to its own criteria, the expression of the principle is meaningless, as it cannot itself be verified and it is not analytic.

There are also problems with the observation or protocol statements:

They were first thought to refer to experience, which is private (phenomenalistic language). If they refer to physical reality (physicalistic language, thing language), what is their relation to experience? How can we justify why we prefer one language to the other?

How can they form the foundation of meaning and knowledge? They must be true in order to have meaning. However, according to the verification principle, a proposition has meaning only if it can be true *or* false i.e. only contingent propositions have meaning.

In order to solve these problems Carnap introduced the distinction between the *material* and the *formal* mode of speech. By material mode he meant any kind of speech in which there is reference to facts, objects or phenomena, as opposed to words. The formal mode refers only to linguistic forms. Instead of "Five is not a thing but a number" we should say: "'Five' is not a thing -word but a number-word", otherwise we mix up the modes and create philosophical controversies, which are really pseudo-problems. If we speak in the formal mode we just trace logical relations between statements. We thus avoid the problems about their connection to reality and the nature of that reality. According to Carnap, there are different conceptual schemes with different logics and there is no criterion to prefer one scheme from another except its usefulness in constructing a scientific language.

Concluding remarks

Logical positivism's impact can be traced in many fields of contemporary philosophy, especially in logic, philosophy of science, epistemology and philosophy of language.

The logical positivists' important work in mathematical logic and the formalization of scientific language can be seen as pertaining to the theoretical foundations of computer science. Moreover we could find affinities between the positivist program towards a unified scientific language and the knowledge representation systems program, which aims at the exchange and sharing of knowledge between disciplines via mechanical information systems.

Bibliography

The main works of the logical positivists as well as secondary sources can be found in the following entry:

Creath, Richard, "Logical Empiricism", *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2014/entries/logical-empiricism/>.

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