The Types of question and view which logical empiricists pre-eminenty regrded as meta physical were following:

(1) Transcendental question. To this category ... Further, positions Like Parmenides,
doctrine of being, Platos doctrine of heavenly ideas, Spinozas doctrine of substance,
Leibnizs doctrine of monads, kants doctrine of the thing-in-itself, Hegels doctrine of the
Absolute and so on.

(2) Questions of existence. To this group we may count questions such as these: Dose an
external world exist? Does matter exist? Do space and time exist? Do universals exist? Do
numbers (natural, rational, real, complex, transfinite, and so on) exist? Do classes (sets) exist?
Do things like Bolzano's proposition in - themselves exist?

Obviously, logical empiricists did not regard all questions of existence as metaphysical.
Questions like:Did Moses exist? or Are there infinitely many prime numbers? are never ruled
out as metaphysical.

Carnap now and then suggested that questions as to the existence... of particular entities
within a system (or framwork) we take for granted, are meaningful, but that questions as to
the existence of the system as a whole are metaphysical nonsense. The question of The
existence of Moses, or an infinity of prime numbers, is, he maintains, of the former kind,
whereas questions about the external world or the number system are of the latter.
Questions about assences, Under this title I bring together querotions such as these: what is the nature of external World? Is it (as Russell said) a logical construction from sense-data, or does it have independent reality (as realists of different persuasions assert)? Is the material world really mental (as, for example, according to Leibniz’s doctrine of monads), or is it non-mental? what is the nature of time and space? Is Newton’s absolutist or Leibniz’s relativist interpretation correct? Are universals mere names (as nominalists argue), ideas in the mind (intentiones animae), as the medieval conceptualists taught, or do they have an independent reality, as Plato assumed?

Semantic questions. what is meaning of this or that expression (word, sentence)? Does this expression have the same meaning as that? Etc ... In the 1930s Carnap thought that questions of meaning, as usually understood, are metaphysical or, at least, that they are a source of metaphysics. But he also maintained that metaphysical questions of meaning can, to a large extent, be translated into legitimate syntactic questions. Under the influence of Tarski’s semantic investigations, Carnap later abandoned this point of view, and came to think that the semantic study of language is as legitimate as the syntactic.

In Meaning and Necessity (1947) he reintroduced, for instance, a series of distinctions (predicate / attribute / class; individual name / individual concept / individual; and sentence / proposition / truth value), which he earlier regarded as belonging to a metaphysical Platonism.
(5) Question of Values. Logical empiricism harboured of large number of divergent views as to the nature of value statements and normative statements. In 1928 Cornap thought that value concepts could be defined within science. with several other logical empiricists Ayer, Von Mises, etc.), he later took the position that value) statements have approximately the same status as metaphysical . assertions and fall victim to essentially the same critique as these Logical empiricists also sometimes defended an emotive theory similar to that condensed by Hagerstrom and Stevenson.

Several intuitive notions of meaning can, in fact, be distinguished in the Logical-empiricist discussions of the thesis.

(1) A meaningful sentences is a sentence which is true or false. This concept of meaningful sentence plays a central role in Russells Theory of types, and was borrowed there from by logical empiricism. we may Call it Russells, concept of meaning.

(3) A meaningful sentence expresses something which could possibly be the case. This notion of found, for example, in Schlick, and if we wish to have a name for it, we could call it Schlick's concept of meaning. A sentence which is meaningless in this sense can presumably be meaningful in the sense of Frege as well as in that of Russell.
A meaningful sentence is one which serves a genuine function (to be stated more precisely) in empirical science. This could be called the empirico-functional concept of meaning. A priori, it appears plausible that a sentence could be meaningful in all the preceding sense although, in the present state of science, it lacks this kind of meaning.

At this inception Logical empiricism seems to have been primarily interested in (1). Little by Little, especially in the writings of Carnap and Hempel, (5) has become predominant. This shift in emphasis corresponds to another change in the verification principle. It was initially presented as though it expressed a fixed boundary for the languages of science and philosophy. In the later publications of Carnap and Hempel, the boundary has become variable. It is made dependent on the content of scientific theory and will shift as this content changes. A sentence which does now serve the function implied by the empirico-functional concept of meaning may come to lose it.
whether or not a given linguistic expression is a meaningful sentence. In the later discussion, on the other hand, an essentially theoretical interest is attributed to the thesis. In 1950, Hempel called the thesis a criterion but he expected above all that it should, together with the explication of certain of other concepts, provide the framework for a general theoretical account of the structure and the foundations of scientific knowledge.


The attempts to make the verification principle precise, can, roughly speaking, be divided into what I shall call the atomistic and the holistic ones. In the holistic attempts a certain (formalized) Language $L$ is indicated, and meaningful sentences are then identified with those sentences which either themselves belong to $L$, or can be translated into sentences that do. The atomistic attempts do not have this character: They explain meaningfulness as a property which belongs to a sentence independently of its inclusion in, or translatability into, a more comprehensive language. The early attempts at precise formulation were on the whole atomistic, while the later were generally holistic.


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At the basis of all the attempts to lay certain rather vague ideas of the following sort. To know what a sentence means, is to know what would be case if it were true.

To know what the sentence means, it was also said, is to know what difference to the world it would make if it true rather than false.

To know what the sentence means is, hence, to know what difference to our experience would make if it were true rather than false.

If it is true, one experiential fact, or set of facts, will obtain, if it is false, another.

Hence, a meaningful sentence is one that can be verified in experience, if it is true - or falsified, if it is false.
VP2. If the sentence A is neither logically true (analytic) nor logically false (contradictory), then A is meaningful if and only if A can be Verified or falsified through a finite number of observations.

All of the more careful attempts to make the verification principle precise were based on the idea of what were called observation or protocol sentences.

Such a sentence was on that could be verified conclusively by a single observation, or one that described the content of a single conceivable observation sentences were thought of as the linguistic counterparts of conceivable observations.

In terms of this idea, VP2 becomes:

VP2X. If A is neither logically true (analytic) nor logically false (contradictory), then A is meaningful if and if A or the negation of A follows from a finite, consistent set of observation sentences.

Opinions have differed as to what sentences should be considered as genuine observation sentences. Schematically, there were at least the following three positions on the question.

(a) Observation sentences describe what a person is directly experiencing or could directly experience at a given moment of time, for example, blue here now, red there, red circle now, etc.

(b) Observation sentences say that a person at a given moment of time directly experiences something, for example, P now sees a red circle.
(c) Observation sentences describe directly observable physical phenomena, for example A red cube is lying on the table.

Araf ندبی: (چ) جملات مشاهدی یبدار یا قیفی چگونه مسئوی قابل مشاهده را توصیف می کند. نظری این که: (یک مکعب قرمز روي می قرار دارد.

20. ویدریک در صفحه 213 می نویسد:

پا در صفحه 317 می نویسد:

(ج) جملات مشاهدی بدر یا قیفی چگونه مسئوی قابل مشاهده را توصیف می کند. نظری این که: (یک مکعب قرمز روي می قرار دارد.

20. ویدریک در ادامه نم صفحه ای در پروینری نتایج این سه دیدگاه سخن می گويد و در انتهای این صفحه و صفحه بعد 214 نوشته می گويد:

Assume now that B is an observation sentence, and that A is found to follow from B and hence is established as meaningful. Then A or C will also follow from B and be meaningful . even when C is meaningless.

But this, Hempel observes, goes against the principle generally accepted by logical empiricists that a compound sentence (for example A or C) is meaningful if and only if all of its component sentences (here A,C) are meaningful.

پا در صفحه 317 می نویسد:

(ت) گونه گرازی بنطقی را براي مشکلات جدی مواجه ساخت. از جمله این دشواری ها مفهوم منطقی (استنظامی) بود. اگر عبارات الاف از معنی عبارات ب نتیجه شود.در ان صورت، معنی عبارات (الف یا ج) نیز می باید از معنی عبارات ب نتیجه شود. ول که ج عبارات فاقد معنا باشد. اما این یا یکی دیگر از معنی معنی های داور بر این که هر عبارات مزاحم معنادار است. اگر و فقط اگر هر یک از اجسام آن به معنای معنادار باشند. درتعارض بود.

21. ویدریک در صفحه 214 می گويد:

But VP2X apparently cuts away most of science,. Neither Newton's mechanical laws, nor Maxwell's electrodynamical equations, nor Einstein's theory of relativity satisfy the demand . of VP2X upon meaningful sentences.

پا در صفحه 318 می نویسد:

و پایدار صفحه 318 می گويد:

از این گشته، چنین به نظر می رسد که اصل تحقیق یپهیبی به صورت (ت- 2) سیابی از نظریه های اصول علمی.

نظری نظری نیومن مبانی اکتودینامیک ماکول و بسیاری از استنظامی یا نیز به عنوان مهم و بی معنای توکتی که.

هیچ یک از این نظریه ها و نظری نیومن از به هم بیشتری نمود محدودی از قضاوتی مشاهداتی حاصل نمی شود.

22. ویدریک در ادامه صفحه 214 پس از این جمله نگیر می گويد:

It was sometime suggested that the verification principle should be stated roughly as follows: VP3. If a sentence A neither logically true (analytic) nor logically false (contradictory), then A is meaningful of and only if A or the negation of A follows from a finite consistent set of observation sentences.

پا در صفحه 318 می نویسد:

و دکتر پایدار صفحه 318 می گويد:

در پروینری با صورت های اصل تحقیق یپهیبی به صورت دیگر تغییرداده شد:

(ت- 2) اگر جمله ج نماینگی است و نه نتایج منطقی در این صورت، ج معنادار است. اگر و فقط اگر ج یا نقض آن از یک مجموعه محدود و منسجم از گزاره های مشاهدتی به همراه یک نظریه علمی مستقر نتیجه شود.

22. ویدریک در صفحه 214 افزاید:
This formulation, too, is open to a number of serious objections. What is established scientific theory?

Dose it have to be meaningful? If it does, by what criterion shall this meaning be judged?

Using Principia Mathematica as the logical foundation, Carnap sketched, in his 1928 volume The Logical Structure of the world, a supposedly universal empirical language. For the sake of simplicity I shall call this language L28. The signs in L28 are divided into types, according to Russel’s theory of types and the construction of sentences from the typedetermined signs follows the rules of this theory.

At the bottom of the type hierarchy in L28, just as in Principia Mathematica, there is domain of individuals, or, as Carnap said in 1928, basic elements.

Principia Mathematica assumed (at least in hypothetical form) that there are infinitely many individuals, but left their nature undetermined. In L28 Carnap adopts a methodological solipsism implying that the individuals are his own so-called elementary experiences.
According to Carnap, the elementary experience of a person are finite in number. Hence the axiom of infinity of Principia Mathematica fails to hold in L28.

(on this point there is a serious lack of clarity in The Logical Structure of the World. The axiom of infinity is brought into Principia Mathematica to make the construction of numbers (natural, whole, rational, real, and so on) possible. In The Logical Structure of the world it is supposed that the individuals are a finite number of elementary experiences, but at the same time physical space - time is constructed as a continuum of quadruples of real numbers (here do these real numbers come from.?

In Principia Mathematica there are only logical signs. In order to make L28 capable of expressing assertions about empirical states of affairs, it is necessary also to introduce signs with an empirical meaning.

In Testability and Meaning (1936 - 7) this question is at the very center of Carnaps interest.

Here he sketches an empirical Language, Let us call it L36, whose empirical character is guaranteed by the manner all its predicates are ultimately tied to observation predicates.
A predicate $P$ is said to be observable for an organism $O$, if $O$ (for a suitable object $a$, and under suitable conditions) can, with the help of a few observations, obtain evidence for, or against, the sentence $a$ has $P$, sufficiently strong to enable $O$ to accept or to reject the sentence.

In an early phase Carnap and other logical empiricists shared Hume's view that it would be possible, by means of explicit definition, to reduce all legitimate terms to observation terms.

The predicates in L36 are thought to be ordered in a series, $P_1, P_2, P_3, \ldots$ in such manner that every term $P_n$ fulfils at least one of the following conditions:

(a) $P_n$ is an observable predicate.

(b) $P_n$ is explicitly defined on the basis of earlier terms in the series.

(c) The scientific theory formulated in L36 contains theorems which reduce $P_n$ to earlier terms in the series. If we interpret $P_n$ as the name of a set, then such theorems, so-called reduction sentences, can be written in the following manner:

\[ a \subset b \subset c \subset \ldots P_1, P_2, P_3, \ldots \]
If we interpret Pn as the name of

The predicates in L36 are thought

(i) X is a subset of Pn,
(ii) Pn is a subset of Y,
where X and Y are names constructed entirely with the help of earlier terms in the series.

The sense of such reduction sentences can be illustrated by the Venn diagram (I).

Condition (i) states a lower bound, for the set Pn, while (ii) states an upper bound.
In Case (c) Carnap demands that scientific theory state both a lower and an upper bound, and that these bounds not be trivial, i.e. that the theory does not declare $X$ empty and $Y$ universal. As science develops, the bounds may be displaced. The theoretically possible eventuality that given bounds are trivialized, and that $P_n$ must therefore be eliminated from the vocabulary, has perhaps a minor practical relevance. The opposite eventuality is that the bounds are brought to coincide. The reduction sentences, which are regarded by Carnap as a sort of partial definition, would then be transformed into an explicit definition of $P_n$, and an instance of case (c) would be transformed into one of case (b).

In a History of Philosophy Vol.3, Carnap demands that scientific theory state both a lower and an upper bound, and that these bounds not be trivial, i.e. that the theory does not declare $X$ empty and $Y$ universal. As science develops, the bounds may be displaced. The theoretically possible eventuality that given bounds are trivialized, and that $P_n$ must therefore be eliminated from the vocabulary, has perhaps a minor practical relevance. The opposite eventuality is that the bounds are brought to coincide. The reduction sentences, which are regarded by Carnap as a sort of partial definition, would then be transformed into an explicit definition of $P_n$, and an instance of case (c) would be transformed into one of case (b).