

A comparison of Frege and Putnam's anti-psychologism

Junyao Ma

School of Marxism, Jiangsu Normal University, Xuzhou 221116, China

Abstract: Frege and Putnam represent two different approaches to anti-psychologism. Psychologism has often been interpreted as a form of internalism, while anti-psychologism is associated with externalist viewpoints. This paper examines the transformation of the development process from the opposition between psychologism and anti-psychologism to their influence and integration. It specifically focuses on the issue of "anti-psychologism" and takes G.Frege, one of the representatives of anti-psychologism, as the starting point. The paper is based on his anti-psychologism thought, with a critical analysis of his argumentation against psychologism and an examination of H.Putnam's anti-psychologism, which differs from Frege's perspective. By understanding their rational factors, theoretical difficulties, and limitations, we can gain a clearer insight into "psychologism" and recognize the rationality of psychological factors in philosophical research topics and methods

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While Frege advocated for a logical view of anti-psychologism and introduced the concept of "the third realm", his framework was marred by ontological and epistemological contradictions. On the other hand, Putnam argued that meaning does not reside solely in the mind, presenting two major criticisms of traditional theories of meaning, although these arguments do not constitute a complete refutation. Upon analysis of both perspectives, it becomes apparent that psychological factors have a reasonable and positive impact on research.

1. Frege's anti-psychologism

Frege's criticism of psychologism in philosophy is all-round and mainly focuses on the two fields of logic and philosophy of language. Therefore, the investigation of Frege's anti-psychologism also starts from the two aspects of logic and philosophy of language.

1.1. Logical anti-psychologism

Logical psychologism maintains that logic comes from psychology. Logical psychologists have mostly accepted the British empiricist philosophy, which holds that experience is the source and foundation of knowledge, and that logic is part of human knowledge without exception.

Frege's anti-psychologism stems from his study of mathematics. He insisted that the basis of mathematics was logic, and that mathematics was derived from or reduced to logic. To take logic as the basis of mathematics, it is first necessary to oppose psychologism. Frege argued for the relevance of mathematics and logic, arguing that the two were closely related, and that mathematics "must categorically reject any assistance from psychology"^{[1]89}, so logic must be, and that "all inquiries into the persuasiveness of reasoning or the soundness of definitions must be logical"^{[1]89}, not psychological. A definition based solely on experience, although valuable, does not guarantee rigor, and is not logically sufficiently reliable. Frege pass such analyzed, and reached the conclusion that logic cannot and should not be based on psychology. Frege also criticized J.S.Mill's view of mathematics by pointing out that mathematical propositions are not derived from experience by induction principles, nor are they descriptions of an observed fact; Where a definition of a number comes from and whether a definition of a number can be made before the fact is observed; We can't explain facts about numbers like 0 and 1. Frege draws the conclusion in *The Foundations of Arithmetic*: the laws of arithmetic are analyzed judgment and are a priori, so the laws of logic must also be a priori. Such a conclusion is the opposite of psychologism.

Frege "wanted to make a clear distinction between the psychological and the logical, between the subjective and the objective"^{[2]8}. In the course of his critique of psychologism, Frege takes a logical stand and distinguishes logic from psychology. Frege believes that the main differences between the two lie in the following aspects: First, mathematics and logic do not belong to psychology, and their research objects and laws are not defined, explained or proved by psychological observations and laws; Second, mathematics is the most precise of all

the sciences, with a high degree of rigor, while psychology has many inaccuracies; Third, logic deals with the objective “true”, mathematics deals with the objective and idealized, while psychology deals with the subjective and specific. Frege further criticized psychologism (“logical psychologism”) in *Grundgesetze der Arithmetik*. Frege argued that there are two different types of psychophysical logics^[3] and neither of these understandings is acceptable.

1.2. Frege’s Theory of Meaning and anti-psychologism (“The Third Realm Hypothesis”)

Frege’s anti-psychologism in the two fields of philosophy of language and logic is closely related to a large extent.

Frege believed that proper names have both meaning and reference, and his distinction between meaning and reference is an important contribution to contemporary philosophy of language. Before this, Mill believed that proper names only refer to, but have no meaning. Frege explored the meaning of proper names in his classic treatise on *On Sinn and Bedeutung*, but he did not clearly give what the meaning is. He stressed that the meaning of proper names is not mental images or ideas, making a vivid metaphor that the moon is the reference, the meaning is the telescope image, The subjective impression produced by individuals pass telescopes is the mental image. The mental image is changeable, guided by people, is subjective, different individuals can not compare the mental image, but different individuals can understand the same meaning. Later, in *Thought: A Logical Study*, Frege argued that the meaning of a sentence is proposition or thought. In Frege’s opinion, the meaning of sentence is thought, the reference of sentence is truth value, and people’s thinking of language is to grasp the thought of sentence and judge the truth value of sentence. According to Frege, the main problem with psychologism in philosophy is that the mind often misunderstands language, thus destroying the objective commonality of meaning and thought.

Frege believes that the meaning of a proper name is not something subjective or psychological of a certain cognitive subject, but an objective object that can be grasped by any cognizer. He put the meaning of sentence (i.e. thought) into “the third realm” outside the physical world and the psychological world, so as to ensure objectivity. Concerning the “third sphere”, Frege has some statements that the truth value of the thoughts expressed in some statements, with the time stamp, is never changed. Frege argues that the Pythagorean theorem can be recognized by others as well as by me, that the thought I express by this theorem can be recognized by others, and if so, it is not the content of my consciousness; If the content of the Pythagorean theorem is different for me and for others, then “my Pythagorean theorem” “his Pythagorean theorem” and so on are different theorems, then my thought is the content of my consciousness, and his thought the content of his consciousness. If “true” and “false” apply only to what I personally own, they can only apply to the sphere of my consciousness. Since the content of consciousness of different individuals is incomparable, the object to which truth and false-thought, is applicable, must not belong to my consciousness. From this Frege concludes that thought is neither a thing of the exterior world nor an idea. This necessitates the recognition of the existence of a “the third realm”...For example, if the idea expressed by the Pythagorean theorem is true, then it is a timeless truth, independent of whether anyone thinks it to be true, and true whether anyone admits it or not. According to Frege, sentences express thoughts, which are always true or never false. The meaning of a sentence is the function of its constituent words, the meaning of a sentence is the thought, and the meaning of a word is the concept. Every word, therefore, corresponds to a concept in the third realm.

Frege believes that the relationship between people’s mental activity and language and the meaning of proper names or sentences is accidental. To illustrate this accidental relationship, Frege first argues that “ $a=b$ ” expresses the same relation between a and b , but that such identical statements are not necessarily empirical. In Frege’s opinion, to truly understand the meaning of a word is to grasp its connotation, especially some words have no reference in the real world, but it has meaning, people can still understand the meaning they want to express. On the issue of the connotation of linguistic expressions, Frege emphasizes that we should avoid understanding the meaning of words or sentences from the perspective of psychologism. If the connection between meaning and words is psychological, even if the connotation of expressions is objective, we may fall back to the view of psychologists, to equate the connotation with the mental object. Frege believes that people need to use linguistic expressions to grasp the connotation, but there is no internal connection between the two, that is to say, different expressions may have the same connotation. Secondly, in general, for complex sentences, the reference of words placed in the context of belief is called “indirect reference”. In the context of multilayered beliefs, word meaning cannot avoid being associated with the mental states of one or more cognizers. According to Frege, if substituting an expression in a sentence results in a change in the truth value of the sentence,

it means that the reasoning forms of the two expressions are different. The functional relationship between meaning and reference enables people to grasp the logical law of thought, and thus grasp the truth value of the corresponding sentence.

1.3. The problem

From Frege's argument, the theory of the third realm is ontologically dubious. According to Frege, the meaning of a sentence is thought, the objective content of thought, which is common to many people, is not unique to any one person, and always appears in the same way as the same thought in all people's understanding. If a thought is true, it is true independently of man's acknowledgment, or even whether he thinks about it. The third realm contains not only thought, but also the mind. Frege did not elaborate on mind, but this mind is not thought, so is there a fourth realm? In the same way, the meaning of the sentence is thought, the reference is the truth, and the truth is not the idea or the mental image, so which domain does the truth belong to? Second, the third realm theory is also epistemologically dubious. According to Frege, the third realm has no properties of time and space. How do we know it exists, how do we know about it, how do we know about it? In this regard, Frege proposed "the power of thought". Thus there is a contradiction. Frege's position is to reject the mental at all, but in explaining the problem of understanding the third realm, he sets up the mental capacity of understanding and reintroduces the mental element. In this way, the knowledge of the third realm requires a psychological study, which Frege rejected, so that his doctrine still appears mysterious. In addition, the presupposition of the third realm creates a inside dissonance in Frege's semantics. Since meaning determines reference, if meaning belongs to the third realm, how does one decide to refer to something in the exterior world?

2. Putnam's anti-psychologism

Putnam, like Frege, rejects psychological things, but they represent anti-psychologism in both philosophies of language. Frege is a supernatural anti-psychologist who establishes a third realm beyond nature and psychology as the source of meaning, while Putnam is a naturalistic anti-psychologist with a strong naturalistic tendency. He attributes all previous theories of meaning to "meaning is in the mind" or "meaning is in the heart" and maintains that "meaning is not in the mind".^[4]

2.1. A critique of traditional semantics

Putnam argues that traditional semantics (meaning theory), as represented by Frege and R.Carnap, rests on two false assumptions:"(1) To know or understand the meaning of a word is to be in a (narrow) psychological state. (2) The meaning (connotation) of a word item determines its extension."^[5]219

The first hypothesis treats meaning as a mental entity, that is, the meaning of a word is equivalent to the concept or idea in one's mind when one hears, sees, or thinks about the word. According to Putnam, "psychological states" are broadly defined in a narrow sense. "Broad psychological states" promise the existence of objects, and this psychological state is also the object of psychological study. And the traditional philosophers are talking about "narrow psychological state", so Putnam re-elaborated two big assumptions:"Let A and B are any two words with different extensions, according to assumption(2), their meaning (connotation) must be different, according to assumption(1), knowing the meaning of A and knowing the meaning of B are in the narrow psychological state, but, Just as the meaning (connotation) of these two words determines the extension, so these psychological states determine the extension of A and B." Thus, traditional semantics holds that the (narrow) psychological states determine the meaning of words, and thus their extension.

The second hypothesis holds that two words with the same extension can have different connotations, for example, "animals with hearts" and "animals with kidneys" have the same extension, but different connotations. However, two words with the same connotation cannot have different extensions.

2.2. Externalist Theory of Meaning (Two Major arguments)

Putnam holds that the confluence of these two false assumptions leads to the erroneous conclusion that the psychological state determines the extension of words, which, in sum, is what Putnam called "the meaning is in the mind". Putnam proposed two thought experiment arguments to refute the traditional erroneous view that the same psychological states can determine different extensions.

Putnam's first argument uses the examples of "elm" and "beech". Suppose that we do not know what an elm and a beech look like, that we cannot identify an elm and a beech, but when we say "elm", we have a common extension with what others say about "elm", that is, we can know that the elm and the beech are two different referents, and that they do have different extensions. What is the reason? Putnam argues that it can't be due to our psychological state about the two, which may be exactly the same when we say "elm" as when we say "beech". This argument involves the division of language and shows that individual psychological states do not determine the extension of words.

The second argument is the famous "twin-earth argument", in which Putnam attempts to show that collective, whole psychological states do not determine extension either. Suppose there was another earth, exactly like ours, with one difference: the molecular structures of water on the twin earth is XYZ. When Earth and the people on the twin earth say "water", would their psychological states be different? The psychological states are the same, but the extensions of water are different: the Earthman refers to H₂O, while the twin earth refers to XYZ. Similarly, Putnam's "brain-in-a-vat" and other myths.

2.3. The problem

Putnam does not succeed in arguing that meaning is not in the mind, and that his argument does not constitute a complete rebuttal of "psychological state determines extension".

First, criticize the goal shift. Putnam wants to criticize Frege and other traditional semantics that "to know the meaning of a word is to be in a certain psychological state", but what he actually criticizes is "the meaning of a word is to be in a certain psychological state".

Second, the argument for the twin earth hypothesis is entirely based on the argument of fiction. Under the premise of pure fiction, almost any proposition can be proved, and the argument is not strong enough. Such an argument is similar to the "possible worlds", we can assume that there are an infinite number of possible worlds, one of which all the physical laws of the earth are wrong, such as the three-body world with three suns, constant planets and random epochs... Taking a step back, if a twin earth is possible and the water molecule is XYZ, then it is different from the chemical reactivity etc. produced by substances, then how can the people on the twin earth have the same psychological state about water as the people on the Earth?

Third, ignore the fact that human language communicates.

Moreover, R.Searle, in his writings, also refuted the arguments given by Putnam.^[6]

3. Analysis

The basic points of anti-psychologism (represented by Frege and Husserl) are: From the perspective of the characteristics of the discipline, logic is a normative science, while psychology is an empirical science, and logic is completely different from psychology. The views of logic based on psychology are contradictory and absurd. Logic has necessity, objectivity, accuracy and rigor, and cannot be built on the basis of probabilistic, subjective, fuzzy and inaccurate psychology; Psychologism confuses the normative laws of thinking with the laws of nature (descriptive laws), confuses "true" and "take it as true", confuses some logical concepts (such as reasoning, proof, truth, etc.) with psychological concepts and their characteristics, logic is a normative law about how humans think correctly, rather than a description of how people actually think; Psychologism is bound to lead to relativism.

Although the idea of anti-psychologism has become a highly respected mainstream view in the study of the relationship between logic and psychology, their criticism of psychologism has some shortcomings. In his criticism of psychologism, Frege set up the abstract entity "thought" in order to separate the logical thing from the psychological thing, and then set up "the third realm". The abstract entity "thought" belongs to this field, but the setting about it is not perfect. On the question of how to grasp thought, Frege does not provide a feasible understanding theory. When he constructed the logic view of anti-psychism, he pointed out that the premise of grasping thought is that there is an abstract thinker who grasps thought with the help of his thinking ability. However, he only mentioned that the thinker grasps thought, but he did not explain how the thinker understands and grasps thought, nor could he explain how the grasped thought is transmitted to others, so that he fell into the vortex of mysticism. In fact, we tend to take empirical facts as the basis for judging the truth and falsity of thoughts, and the knowledge we have about experience helps us determine the truth value of thoughts. Frege's vagueness, or avoidance, of these issues prevented him from completely separating logic from mind, leading to the dilemma of his anti-psychologism.

What Frege and Putnam's anti-psychologism deserves to be affirmed is that meaning is indeed not something private or subjective, meaning is public, but the common meaning is something shared by the individual mind, rather than the external world or the third realm. If we understand anti-psychologism as anti-psychologism, that is, against the reduction of logic and semantics to psychology, against the subordination of logic, mathematics, etc., to psychology, this is a correct position; It is wrong if we understand it as the total exclusion of psychological factors and the erasure of all that is psychological in the study of logic and mathematics. How is it possible, then, for the study of the psychological element in philosophy, etc.? C.S. Peirce regards the interpretation of meaning as a psycho-action process, and his behaviorist semantics contains the psychological facts about the interpretation and understanding of (meaning), and ensures the clarity of meaning through action. Taking Peirce's philosophy of language as an example, the analysis of psychological factors may illustrate the feasibility of meaning based on psychology and the influence of psychological factors on philosophical research. So how can we incorporate the study of psychological elements into philosophy? Peirce views the interpretation of meaning as a psycho-action process, and his behaviorist semantics includes psychological facts about interpreting and understanding meaning while ensuring clarity through action. ^[4]By examining Peirce's philosophy of language as an example, analyzing psychological factors may demonstrate the feasibility of basing meaning on psychology and illustrate how psychological factors influence philosophical research.

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About the author:

Junyao Ma (November 1999-), The Han nationality, Chongqing, Postgraduate student, School of Marxism, Jiangsu Normal University, Her research direction is philosophy.