

WITTGENSTEIN ON EPISTEMOLOGICAL STATUS OF LOGIC¹

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The problem of the epistemological status of logic is the core of Wittgenstein's philosophy of logic. There are two known solutions to this problem: *apriorism* and *aposteriorism*. It appears that one solution or the other must be true. Scholars believe that the early Wittgenstein's approach to the epistemological status of logic is a radical version of apriorism. The aim of the paper is to provide an adequate reconstruction of the later Wittgenstein's solution. The main question is: Provided that there is a disagreement between the two Wittgenstein's views of the epistemological status of logic, do we need to consider his later position as an example of aposteriorism? Our answer is: No. The later Wittgenstein's position questions the conceptual framework of the whole philosophical discussion. His remarks on the epistemology of logic are directed against both apriorism and aposteriorism in the philosophy of logic.

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In his philosophical remarks, Ludwig Wittgenstein is frequently concerned with the concept of 'logic'. In the remarks from the later period,² he is concerned, among other things, with the problem of the epistemological status of logic. He asks questions such as:

How is something like *logical necessity* possible?;
How is something like *following* a logical rule possible?;
Where does the *compelling force* of a logical proof come from?;
In what sense is logic something *pure*?; etc.

In the philosophical community, it is generally accepted that the later Wittgenstein's remarks deal with the problem of the epistemological status of logic, but the philosophical motivation behind the remarks is still not clear. Instead, there is a growing disagreement

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² Relevant part is especially the book I from *Philosophical Investigations*, and the chapter I, II, and VI of the revisited edition of another selection of his remarks, *Remarks on the Foundations of Mathematics*.

among various interpretations over these remarks.³ Moreover, the observation that Wittgenstein denies the very idea of *philosophical content* misleads many interpreters into holding the view that there is no new content in his remarks.⁴ This consideration is built upon the belief that the later Wittgenstein's remarks on the epistemological status of logic try to communicate a *new sense* to us. I argue that, contrary to the widely accepted view, there is a *philosophical content* in them. However, it is not easy to address the new content. My aim in this paper is to clarify the philosophical motivation behind the later Wittgenstein's remarks on the epistemological status of logic.

This consideration has two parts. The first part is the background for the second part. In the first part of the consideration I outline a relationship between the two different Wittgenstein's views of our logical operations: the early view and the later view. In the second part of the consideration I offer a reconstruction of the motivation behind the later remarks on the epistemological status of the statements representing the logical rules.

The final note: In this consideration, I do not care about the fact that it makes no sense to distinguish between the basic logical rules and the theorems in Wittgenstein's own notation from *Tractatus logico-philosophicus*. This means that I distinguish between the basic rules and the theorems in my own illustrations. After all, I try to bring Wittgenstein's remarks on the epistemology of logic closer to the 'mainstream' of the philosophy of logic.

I. The Two positions. Before I turn to motivation of the later remarks on the epistemological status of logic, it will be useful to sketch briefly a relationship between the two different Wittgenstein's views of our logical operations.

In the philosophical community, it is widely accepted that there is one view on the act of following a logical rule connected with the author of *Tractatus logico-philosophicus* and another view on this act connected with the author of *Philosophical Investigations*. As already stated, we call the first view 'early', and the second view 'later'. Of course it is acknowledged that there is a deep disagreement between these two positions. At the same time, however, it is acknowledged that there are various beliefs in which the early position and later position find themselves in agreement. As if there was a kind of continuity behind the discontinuity in Wittgenstein's philosophical thinking. Both continuity and discontinuity are of great importance for this consideration. Why? As Wittgenstein himself explains,

...the latter could be seen in the right light only by contrast with and against the background of my old way of thinking. (Wittgenstein 1958, Preface)

Continuity

Let me start by stating the four beliefs which are shared by both Wittgenstein's

³ See (Dummett 1966, 425); (Stroud 1966, 489); (Baker 1988, 242); (Čana 2010, 77).

⁴ See (Carruthers 1998, xii).

views of our logical operations:

[I.I.] Both philosophical positions agree that *there are elements* in our linguistic transformations *which we cannot reject*, if we wish to communicate a definite sense with one another. In other words, there are elements in any significant activity involving symbols which ‘stand fast’ for every speaker. It would be more correct to say that *we do not reject* these elements rather than *we could not reject* them. According to Wittgenstein, under normal circumstances, we do not even doubt them. Why? Simply, it makes no sense to speak this way. It belongs to this activity that these elements are not even doubted. As they constitute a possible act of doubt, the expression of doubt has no place here. From Wittgenstein’s perspective, to doubt these elements would mean that this activity collapsed.

It follows that there are linguistic components that are like *hinges* on which other linguistic components *turn*. At the same time, it follows that some components in our linguistic transformations are epistemologically *grounded* – we possess a reasons for them – while other components are rather *shared* by every speaker – and we cannot give a justification for them.⁵

We know, with the same certainty with which we believe any mathematical proposition, how the letters A and B are pronounced, what the colour of human blood is called, that other human beings have blood and call it ‘blood’.

That is to say, the questions that we raise and our doubts depend on the fact that some propositions are exempt from doubt, are as it were like hinges on which those turn.

That is to say, it belongs to the logic of our scientific investigations that certain things are in deed not doubted.

But it isn’t that the situation is like this: We just can’t investigate everything, and for that reason we are forced to rest content with assumption. If I want the door to turn, the hinges must stay put. (Wittgenstein 1972, §340-343)

[I.II.] Both philosophical views agree that rules of valid inference – the rules that are preserving the truth – belong to the elements which we cannot reject, if we wish to communicate a definite sense with one another. According to these positions, the existence of these rules is an ‘immediate result’ of the existence of our linguistic transformations. The linguistic components representing the rules – for instance, a basic rule of propositional logic [PL] called modus ponens [MP] which, after certain simplification, states that ‘*q*’ must be true if ‘*if p then q*’ and ‘*p*’ are both true⁶ – are *necessary truths* rooted in any significant activity involving symbols. Both positions suppose that there is a connection between, on the one hand, concept of ‘linguistic transformation’, and, on the other hand, concept of ‘logical operation’. This point of view is based on the observation that it is impossible to construct an illogical symbolism, or to imagine a ‘normal circumstances’

⁵ See (Stoutland 1998, 205).

⁶ See (Boghossian 2000, 229).

under which we can achieve something significant by rejecting a logical rule. Any activity of not following such a rule is seen as something that *cannot be thought*. We cannot reject these elements just as we are unable to imagine a spatial object outside space. As if these elements were *given* in the possibility of a communication of a definite sense.

It is as impossible to represent in language anything that ‘contradicts logic’ as it is in geometry to represent by its co-ordinates a figure that contradicts the laws of space, or to give the co-ordinates of a point that does not exist (Wittgenstein 1971, 3.032).

[I.III.] Both positions emphasize that statements representing the logical rules are completely different from other statements. According to them, these statements are not descriptions of anything factual. Nothing in the physical world corresponds to a statement that ‘*q*’ must be true if ‘*if p then q*’ and ‘*p*’ are both true“. These linguistic components are also not generalizations. In fact, the general validity is not the mark of these components. Wittgenstein emphasizes that the statements representing the logical rules have a *unique status* in our linguistic transformations. What is marked by the expression ‘unique’ is that these statements *must be true*. That is the central point. According to Wittgenstein, logic makes itself manifest in the fact that certain combinations of symbols must in every case be true. These combinations of symbols play a constitutive role in any significant activity involving symbols: They are *hinges*, on which other components *turn*. We cannot reject them. Nor can we choose them. As they constitute what we call ‘communication of a definite sense’, the statements representing these hinges cannot be consistently rejected, or chosen. In fact, it even does not make a sense to make a mistake in the act of following such a norm. It is because a statement representing such a norm represents a limit to the expression of thoughts. According to Wittgenstein, this is why we say that such a statement is a ‘limiting case’ of statement.

‘All the steps are really already taken’ means: I no longer have any choice. The rule, once stamped with a particular meaning, traces the lines along which it is to be followed through the whole of space...

When I obey a rule, I do not choose.

I obey the rule blindly.

But what is the purpose of that symbolical proposition? It was supposed to bring into prominence a difference between being causally determined and being logically determined. (Wittgenstein 1958, I, §219-220)

[I.IV.] Consequently both positions suppose that study of the rules of valid inference is the *antithesis* of an experimental science. According to them, the relation between an experimental hypothesis and its empirical evidence is different from the relation between a theorem and its proof. What is the categorical difference? There is a division between the sphere of experiments and the sphere of proofs. Every statement describing the empirical facts is a picture of a state of affairs. In a statement of this kind a possible situation

is constructed. It must be compared, then, with such and such situation. Therefore it is 'merely possible'. On the other hand, the statements representing the basic rules and the theorems of PL, for example, need not be compared with anything. A statement of such kind deals, in contrast to an experimental science, with every possibility. From Wittgenstein's perspective, nothing in this territory is 'merely possible'.

...logic does not treat of language – or of thought – in the sense in which a natural science treats of a natural phenomenon... (Wittgenstein 1958, I, §81)

These are the basic points in which the early and later perspective find themselves in agreement.

Discontinuity

Now, let us take a closer look at roots of disagreement between the two views. There is one crucial point of disagreement between them: the epistemological status of logic.

According to the early position, our logical operations are direct expressions of *a priori relations* between linguistic components of a certain kind. More concretely, the logical rules *flow* from internal properties of the components describing the empirical facts. In *Tractatus*, Wittgenstein is concerned, among other things, with the structure of the language of experimental science. From his perspective, the linguistic components representing the logical rules are a priori intuitions of possible forms of those components which are factual. The unique status of the statements representing the logical rules is therefore presented as a kind of 'inner necessity'.

We have said that some things are arbitrary in the symbols that we use and that some things are not. In logic it is only the latter that express; but that means that logic is not a field in which we express what we wish with the help of signs, but rather one in which the nature of the natural and inevitable signs speak for itself. (Wittgenstein 1971, 6.124)

In our linguistic transformations, we use different symbols to achieve different goals. It is acknowledged that in a field of experimental sciences, we rely heavily on the linguistic components describing the empirical facts, and also that there are two classes of properties in any such component: *internal* and *external*.

According to the early Wittgenstein, the linguistic components that we use to describe the empirical facts have the so-called 'formal structures'. This means that there cannot be a statement describing the empirical facts whose form could not have been constructed. For example, a statement 'There are brick houses on Elm Street' can be in the conceptual framework of PL constructed as '*p*'. It is evident that this formal structure does not preserve the arrangement of the expressions in the statement. For example, it need not involve names. The structure is determined by the so-called 'internal properties' of the statement. What is it? A property is internal if it is not possible that the statement should not have it. For instance, it is the internal property of the statement 'There are

brick houses on Elm Street' that it is bipolar; that it is *either true or false*. It is also the internal property of the statement that it is assertible; that it *can be* under normal circumstances *stated* that 'There are brick houses on Elm Street'. From Wittgenstein's perspective, we can recognize from '*p*' that this linguistic component is either true or false and that it can be under normal circumstances stated.

As the formal structures – such as '*p*', '*non-p*', '*either p or non-p*', etc. – are linked to a broader network, there are also an 'internal relations' among them. In other words, the formal structures of the statements describing the empirical facts stand in internal relations to one another. It is because there are 'internal similarities' between the statements. One formal structure is contained in the other formal structure. As a result, by a series of transformations upon a formal structure one can derive a further formal structure. By Wittgenstein's account, one formal structure *occurs* in another formal structure in many different ways. For example, '*q*' occurs in '*if p then q*' and in '*p*' as the result of MP.

Ultimately, the early position claims that all formal structures of possible statements describing the empirical facts can be shown as a result of *an operation* that produces it out of other formal structure:

The operation is what has to be done to the one proposition in order to make the other out of it. (Wittgenstein 1971, 5.23)

Since this claim, any act of following the rules of valid inference can be understood as *the operation that produces one formal structure out of other formal structure*. At the same time, the statements representing these rules can be presented as *the forms of transition* from one structure to another, as the forms which *show* that one structure follows from one or more structures.

In Wittgenstein's view, the operation that produces '*q*' out of '*if p then q*' and '*p*' is ordered by the internal properties alone. Therefore we can deduce from formal structure of the linguistic components describing the empirical facts that one follows from another. Every constituent of such an operation can be shown as a consequence of the internal relations between the structures. Of course, there is also an outward form of this act, but it has nothing to do with the operation itself. As a result, Wittgenstein proposes that the knowledge of the internal relations between the formal structures of the statements describing the empirical facts is *a priori knowledge*.

All deductions are made a priori. (Wittgenstein 1971, 5.133)

The 'experience' that we need in order to understand logic is not that something or other is the state of things, but that something is: that, however, is not an experience. Logic is prior to every experience – that something is so... (Wittgenstein 1971, 5.552)

Something is 'a priori knowledge' when truth-value of a statement representing the knowledge is recognizable from the statement itself. Such a statement does not need to be compared with anything. This means that the truth-value of a statement representing

a priori knowledge does not depend on experience. [We may metaphorically say that this kind of knowledge is 'epistemically innocent'.⁷] On the other hand, 'a posteriori knowledge' cannot be justified independently of experience. A statement representing this kind of knowledge must be compared with such a situation.

As already stated, the author of *Tractatus* proposes that the statements representing the logical rules can be justified independently of any evidence from experience. In other words, one can be aware of the fact that 'q' follows from both 'if p then q' and 'p' on purely a priori grounds. This radical version of apriorism in the philosophy of logic is based on the fact that whether or not a statement is representing the logical rules can be known from an internal investigation of the statement itself. How? In a linguistic component of this kind its constituents are so combined that the whole statement *must be true*. In *Tractatus*, Wittgenstein invented notation to demonstrate this. In this special notation, it is evident from the formal structure itself that the statement representing MP, for example, cannot be false. [The statement can be shown to have the value 'true' for every possible combination of truth-values 'true' and 'false' for its constituents. In other words, it is true under all truth-values of its constituents.] Therefore to justify a statement representing the logical rules we only need to know the principles that deal with the internal properties.

It is peculiar mark of logical propositions that one can recognize that they are true from the symbol alone, and this fact contains in itself the whole philosophy of logic. And so too it is a very important fact that the truth or falsity of non-logical propositions cannot be recognized from the propositions alone. (Wittgenstein 1971, 6.113)

According to Wittgenstein, this is enough to let the apriorism in the philosophy of logic proceed. It follows that the correct understanding of the statements representing the logical rules can be derived from a priori considerations about the internal properties of the mentioned linguistic components. It seems that there is no need for anything like 'intuition', 'other speaker's minds', 'physical world', etc., in the operations that produce one formal structure out of other formal structure. It seems that the operations are nothing but the successive transformations of symbols, and therefore they are dependent upon the composition of the symbolism alone.

Logic must look after itself. (Wittgenstein 1971, 5.473)

Our fundamental principle is that whenever a question can be decided by logic at all it must be possible to decide it without more ado. (And if we get into a position where we have to look at the world for an answer to such problem, that shows that we are on a completely wrong track.) (Wittgenstein 1971, 5.551)

Men have always had a presentiment that there must be a realm in which the answers to questions are symmetrically combined – a priori – to form a self-contained system. (Wittgenstein 1971, 5.4541)

⁷ See (Shapiro, Weir 2000, 161).

This presentiment leads Wittgenstein to his early conclusion that logic is ‘pure’. According to him, all the statements representing the logical rules are of equal epistemological status. The logical rules are a priori principles governing the construction of all formal structures of possible statements describing the empirical facts. The statements representing these principles specify those properties a symbol must have in order to communicate a definite sense in a field of experimental sciences. At the same time, they represent rules for transformation of one set of statements describing the empirical facts into another. In sum, the statements representing the logical rules are ‘essentially primitive rules’ [*wesentlich Grundgesetze*] in a field of the sciences. Late in his life, however, Wittgenstein is inclined to doubt this philosophical view of logic:

...there seemed to pertain to logic a peculiar depth – a universal significance. Logic lay, it seemed, at the bottom of all the sciences. – For logical investigation explores the nature of all things. It seeks to see to the bottom of things and is not meant to concern itself whether what actually happens is this or that. – It takes its rise, not from an interest in the facts of nature, not from a need to grasp causal connexions: but from an urge to understand the basis, or essence, of everything empirical. (Wittgenstein 1958, I, §89)

The picture that the later Wittgenstein offers in this case is different. It is correct, according to him, that the formal structures of the statements representing the facts stand in the internal relations to one another, but it is not correct that the knowledge of the internal relations between the formal structures is ‘a priori knowledge’. The point is that our logical operations cannot be successfully represented as the expressions of a priori relations among linguistic components of a certain kind. To justify a statement representing a logical rule one need more than the ‘purely a priori grounds’. From the later perspective, there are elements in our logical operations which are not discursive. More concretely, there are *external factors* in our logical operations without which a rule could not determine its correct interpretation. As a result, the correct understanding of the statements representing the logical rules cannot be derived from a priori considerations about the internal properties of the mentioned linguistic components. Such considerations are not enough. We need a number of other heteronomous components here.

We need, for example, a physical world. This means that there could not be a successful act of following a logical rule, if there was no external world. Why? According to the author of *Investigations*, what does play a part in the act of following a rule are the ‘natural expressions’ of the act. Therefore it would be impossible to follow a logical rule if the act had no external expressions. One passage may be mentioned as characterizing Wittgenstein’s new position:

But what becomes of logic now? Its rigour seems to be giving way here. – But in that case doesn’t logic altogether disappear? – For how can it lose its rigour? Of course not by our bargaining any of its rigour out of it. – The preconceived idea of crystalline purity can only be removed by turning our whole examination round. (Wittgenstein 1958, I, §108)

II. The Motivation. As already stated, this consideration is built upon the belief that the later Wittgenstein's remarks try to communicate a *new sense* to us. Well, what is the new sense? What is the philosophical motivation behind the remarks on the epistemological status of logic? Is the motivation to provide a new answer to a philosophical question? Is the motivation to defend, for example, a theory that the statements representing the logical rules are a posteriori rather than a priori?⁸

I do not think so. Wittgenstein is not concerned with the epistemological status of logic to defend a version of aposteriorism in the philosophy of logic. His remarks do not try to demonstrate that the statements representing the logical rules are a posteriori rather than a priori. In fact, no new philosophical interpretation of our logical operations can be found in these remarks. On the one hand, Wittgenstein emphasizes that the *operations that produce one formal structure out of other formal structure* are dependent upon certain factors which might have been different. On the other hand, these elucidations which he provides were not intended to form a new theory. Wittgenstein does not propose that MP, for example, is *something that 'cannot be rejected' and 'might have been different' at the same time.*⁹ In fact, these two expressions may seem to be an incompatible components in a single theory. [Is it not self-contradictory to hold, on the one hand, that the logical rules cannot be rejected, and, on the other, that they are arbitrary?] I do not believe that this is the philosophical motivation behind the later remarks.

Instead, the later remarks try to demonstrate that questions such as 'How is something like *logical necessity* possible?' could not be successfully answered. There is a necessary relation between distinct things. For example, to understand a question one must follow the rules of valid inference. Without these rules as followed – or as *given* – one does not know, how to understand the question 'How is something like logical necessity possible?' correctly. The expression 'correctly', for example, is clear to me only when these rules are followed by me. Otherwise I do not know what the expression 'correctly' really means. If the logical rules are not followed by us, then, by Wittgenstein's account, we do not possess such expressions like 'correctly', 'how', 'is', 'something', 'necessity', 'etc.', etc. Under such *abnormal* circumstances, we do not understand *who we are*. In my view, this is exactly the new sense that the later Wittgenstein's remarks on the epistemological status of logic try to communicate to us:

We do not understand who we are when we question the logical rules.

It follows that a philosopher could not produce an answer to such question like 'How is something like *logical necessity* possible?'. In fact, the question concerned with the unique status of the statements representing the logical rules is misleading us. Such a question arises from our failure to recognize the *constitutive role* of these rules in any significant activity involving symbols. It flows from our failure to understand that anyone

⁸ See (Bac 2007, 592).

⁹ See (Stroud 1966, 489); (Čana 2010, 72).

who tries to question these rules must at the same time presuppose them. This philosophical position presents, therefore, critical attitude against any theory of logical necessity. The motivation of the later Wittgenstein's remarks on the statements representing the logical rules is perhaps most adequately read as removing the motivation for considering the theories about the unique status of these statements. From this perspective, the new task of philosophy is to remove false grammatical analogies that lead us to such theories.

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