

A n n a B r o ż e k

Ajdukiewicz’s Semantic Turn

Keywords: *K. Ajdukiewicz, idealism, Lvov-Warsaw School, metalogic, paraphrases, semantics*

Why “Semantic Turn”?

The crucial moment of Kazimierz Ajdukiewicz’s semantic turn was his talk *A Semantical Version of the Problem of Transcendental Idealism* (hereinafter: SVTI) presented at the 3rd Polish Congress of Philosophy in Cracow in 1936 and published one year later in “Przegląd Filozoficzny” (Ajdukiewicz [1937] 1978). Among Ajdukiewicz’s papers, SVTI is one of the most frequently discussed. What I want to add here is a presentation of the broader background of this article’s idea and its place in Ajdukiewicz’s individual development as well as in the history of early analytic philosophy, particularly of the Lvov-Warsaw School (hereinafter: LWS).

The use of the expression “semantic turn” in the title has double justification. Firstly, the appearance of modern semantics was an essential moment in the development of philosophical investigations of the LWS as a whole. Secondly, Ajdukiewicz himself used the term “turning point” in reference to this moment in his intellectual development. It happened in 1953, when he published the paper *W sprawie artykułu prof. A. Schaffa o moich poglądach filozoficznych* [On Prof. A. Schaff’s Article about My Philosophical Views]. In this article, Ajdukiewicz replied to the ideological attack of the communist regime, which accused him of idealism (and idealism was the main “official” enemy of Marxist-Leninist ideology)¹. Ajdukiewicz’s reply to Schaff is perhaps the only fruitful result of this ideological criticism since he not only refuted Schaff’s

Anna Brożek, Uniwersytet Warszawski, Wydział Filozofii, ul. Krakowskie Przedmieście 3, 00-927 Warszawa; e-mail: abrozek@uw.edu.pl, ORCID: 0000-0001-6550-1891.

accusations but also made a lot of interesting comments about his own philosophy. He wrote, among others:

In my essay of 1934 in which I expounded my radical conventionalism, I did not identify the truth of a sentence with its being a thesis. [...] I did not however warn against identifying these concepts. Because of this oversight on my part a temptation may have arisen to identify these concepts resulting in idealist consequences, I cannot deny that at that time I failed to give a clear account of whether they are concepts having different extensions and did indeed play with the notion of identifying them, thus standing, not quite consciously, at the parting of ways between idealism and realism. During the further development of my views, I rejected the idea of identification of the concepts quite emphatically in 1936. My essay on transcendental idealism reflects this rejection, since I come out quite explicitly against the above identification. This essay is a *turning-point* in my philosophical development (Ajdukiewicz [1953] 1995, p. 30, italics added).

The aim of this paper is to present the background, the core, and the results of Ajdukiewicz's "semantic turn", which took place between 1934 and 1936. I start with presenting the general historical and methodological background of the occurrence of a "semantic turn" in philosophical investigations of the LWS. Then, I move to the individual background, namely the general characteristics of Ajdukiewicz's intellectual development up to 1936. Next, I focus on SVTI and various aspects of its content. I end with a recapitulation and some closing remarks.

The LWS and the Search for the Method of Philosophy

Ajdukiewicz was one of the coryphaei of the LWS, founded by Kazimierz Twardowski in Lwów in 1895, with its second branch in Warsaw established in the 1910s. Members of the LWS did not share common views other than their methodological attitude. In the LWS, philosophy was considered a science, or rather a group of sciences, fulfilling the following postulates: clarity of thought and speech, justification of theses, and respecting the results of sciences.

Given this general unity, in the development of the LWS, its methodological tools underwent a deep evolution. Twardowski's point of departure was descriptive (empirical) psychology in Franz Brentano's sense. His philosophy was based on the analysis of small problems, conceptual distinctions, and on interdisciplinary investigations. His methodological toolkit included elements of what we call today general methodology and logical semiotics. An important

¹ Kazimierz Twardowski, Roman Ingarden, and Tadeusz Kotarbiński were attacked in a similar way by different ideologists.

feature of Twardowski's attitude towards philosophy was his deep respect for philosophical problems and something one may call "philosophical optimism". He considered at least some philosophical problems to be meaningful and generally solvable. According to Twardowski, the most difficult philosophical problems require the involvement of the elements of many various disciplines. We could say today that his attitude towards philosophy was, *par excellence*, interdisciplinary.

Twardowski was interested in, and he contributed to, all the main philosophical disciplines. When speaking of the "semantic turn", it is important to stress that, for Twardowski, truth and other epistemological concepts were central problems of philosophy. One of his earliest dissertations published in Polish² was the paper *On So-Called Relative Truths* ([1900] 1999). His defence of absolutism and his emphasis on distinguishing between the essence and criteria of truthfulness were accepted by almost all members of the LWS. Another important element of Twardowski's philosophy that made an important impact on his students was his general sensitivity to linguistic matters, and his investigations into the relations between thoughts and speech as well as between language, mind, and reality.

Twardowski was also the first in Poland to lecture on algebraic logic. He was, however, highly suspicious of the (over)use of formal methods. Despite his own distrust, he encouraged students to study and use formal methods, on the condition that they would do it in a responsible way and would not become "symbolomaniacs" (Twardowski [1921] 1999). Not surprisingly, Alfred Tarski later stressed that almost all logicians in Poland were direct or indirect students of Twardowski.

Feeling that his student Jan Łukasiewicz is extremely talented in exact sciences, and perhaps being aware of his own limitations in the domain of mathematics, Twardowski encouraged Łukasiewicz to investigate this domain. As an "anti-psychologist" from the beginning, Łukasiewicz finally found in mathematical logic the measure of exactness and "the method" of philosophy. Łukasiewicz lectured on logic in Lwów between 1907 and 1915 (and Ajdukiewicz was among his students in this period). Around 1911, Stanisław Leśniewski, having similar talents and interests as Łukasiewicz, strengthened the logical branch of Twardowski's School. After Łukasiewicz moved to Warsaw in 1915 and was joined by Leśniewski a few years later, they established a school called later the Warsaw School of Logic, a logical branch of the LWS. They investigated purely logical matters and soon their results in this area became world-famous. However, philosophical background and philosophical applications of logic remained important to them. Thus, Łukasiewicz

² Twardowski was born and educated in Vienna where he habilitated in 1894. After he was appointed Chair of Philosophy in Lwów, he wrote almost exclusively in Polish.

and Leśniewski, both students of Twardowski, not only introduced mathematical logic into the LWS, but also opened up new areas of the development of philosophical investigations.

Łukasiewicz stressed several times that from the point of view of the new logic, the assessment of the previous philosophy has to be very severe. He wrote, among others:

When we approach the great philosophical systems of Plato or Aristotle, Descartes or Spinoza, Kant or Hegel, with the criteria of precision set up by mathematical logic, these systems fall to pieces as if they were houses of cards (Łukasiewicz [1922] 1970, p. 111).

Still, Łukasiewicz shared Twardowski's optimism, namely he believed that with the newly discovered logical methods progress in philosophy is finally possible. He openly formulated his programme of the recovery of philosophy in 1927 during the 2nd Polish Philosophical Congress in Warsaw. In his short but firm speech, he expressed the conviction that philosophical theories should be presented in the form of interpreted axiomatic systems (see Brożek 2022). According to Łukasiewicz, the stages of this procedure should be the following. At first, philosophical problems should be reviewed in order to indicate those which may be clearly formulated and resolved. After a given clearly stated problem is chosen, the stages of axiomatisation were: the choice of primitive terms and axioms, providing other terms with definitions based on these first terms and providing other theses with proofs based on these first theses, and finally the confrontation of the results with the data of intuition, experience, and the "hard" results of the sciences. In case of discrepancy, the whole procedure or at least some steps had to be repeated.

The programme of the founder of three-valued logic initiated a discussion about the range and the limits of applying logical methods in philosophy. Zygmunt Zawirski and Jan Salamucha openly admitted that they tried to follow Łukasiewicz's programme. But not only them. Ajdukiewicz, as well as the majority of Polish philosophers, for sure attended Łukasiewicz's Warsaw lecture and took it at least as a serious proposal. Nevertheless, the rapid development of logic in the LWS and the increase of the results obtained in this domain were accompanied by attempts to use formal tools when approaching classical philosophical problems. Various results and analyses provided by the LWS members may be considered as intended or unintended realisations of Łukasiewicz's programme.

Let us add that the mathematical-logical turn of Łukasiewicz and Leśniewski did not replace the "soft" analytical methods used in the LWS but only complemented them. The tools applied in the LWS belong to broadly understood logic, which included elements of mathematical logic, as well as general methodology and logical semiotics. The most important methodological pro-

cedures applied in the LWS are: analysis of concepts, paraphrase of statements, and axiomatisation of theories.

The rise of semantics in the 1930s opened up new areas of applications of formal tools in philosophy. In 1930, semantics was still considered the domain of antinomies (liar's antinomy, Kurt Grelling's antinomy). As a result, logicians trusted only syntactic approaches. However, the results of Kurt Gödel (1931) are often interpreted as stating that the concept of truth in formal sciences cannot be identified with the concept of theorem. Finally, Tarski, "emboldened" by his teacher, Leśniewski, who pointed out that semantic antinomies can be "disarmed" if a rigorous distinction is made between language and meta-language, showed in his crucial work ([1933] 1956) that truth may be correctly defined for some languages.

It is easy to see that the notion of truth proposed within the conceptual scheme of semantics may be understood as a (intended to some degree?) realisation of Łukasiewicz's programme of 1927. It is, after all, an interpretation of a "classical" philosophical problem with the use of logical tools. Tarski states that in the history of philosophy, it was Aristotle who characterised the classical "alethic" intuitions most accurately. "To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true" (*Metaphysics* 1011b 25). Tarski paraphrases Aristotle's formulation into the famous formula " $\langle p \rangle$ is true if and only if p " and states from that from any correct definition of truth, all substitutions of this formula should follow. This is, according to Tarski, the first, "material" condition of the correct definition of truth. Moreover, the definition should avoid semantic antinomies – and this is the second condition. In order to achieve this goal, Tarski limits his proposal to the languages of deductive sciences in which object language and metalanguage are strictly distinguished and in which semantic notions belong to the metalanguage.

Not surprisingly, members of the LWS soon realised the significance of these new results for philosophy. What is interesting, this significance was first noticed in Lwów rather than in Warsaw. Ajdukiewicz was probably the link here, and the crucial moment here turned out to be Tarski's lectures in Lwów in December 1930. Tarski's results were highly appreciated by Twardowski himself (Twardowski 1997, Vol. 2, p. 180). No wonder that these issues were taken up with enthusiasm by Twardowski's last doctoral student – Maria Kokoszyńska (see, among others, 1936).

Let us now examine the impact of the results in metalogic and semantics on Ajdukiewicz.

Individual Background

Born in 1890 in Tarnopol, Ajdukiewicz studied philosophy in Lwów and became one of the closest students of Twardowski. He also attended the logic lectures of Łukasiewicz. Ajdukiewicz received his PhD degree in 1912 (based on a thesis on Kant's concept of space), in the same year as Kotarbiński and Leśniewski. After his doctorate, Ajdukiewicz studied in Göttingen, under David Hilbert and Edmund Husserl. Both formalism and phenomenology had a certain impact on him. Although Ajdukiewicz was strongly connected with Lwów, Twardowski encouraged him to habilitate in Warsaw. This in fact happened in 1921 based on the thesis *From the Methodology of Deductive Sciences* (Ajdukiewicz 1921). This early interest in the formal sciences made Twardowski consider Ajdukiewicz a representative of the mathematical-logical direction of the LWS.

Between 1921 and 1926, Ajdukiewicz lectured in Lwów as a *Privatdozent*. Then he was appointed Chair of Philosophy in Warsaw but remained there only for two years. This Warsaw period was extremely fruitful but also full of tensions (especially with Leśniewski); also: Twardowski wanted his favourite student (and son-in-law) to return to Lwów. This plan came to pass in 1928 when Ajdukiewicz was appointed the third Chair of Philosophy at Jan Kazimierz University³. A Twardowskian background together with the Warsaw episode and also formal efficiency together with a positive attitude towards traditional problems predisposed Ajdukiewicz to be a perfect combination of various currents of the LWS: a representative of its central and most typical branch.

After Ajdukiewicz was appointed Chair of Philosophy in Lwów, the most creative period of his work began. Between 1930 and 1939, he published works commonly regarded as his most original accomplishments. Simultaneously, he became one of the leading philosophers in the LWS. Among other functions, he was the leader of the Polish group at international congresses. It was Ajdukiewicz who presented the Polish delegation for a conference in Prague; he was the one who identified the phenomenon of the “Lvov-Warsaw School” and started to use this term. He also coined a term which became the main hallmark of the LWS: “anti-irrationalism” (Ajdukiewicz 1935).

In the early 1930s, Ajdukiewicz analysed a large domain of problems. The basic question he posed concerned the relation between language and thinking, certainly inspired by Twardowski. He was convinced that the conception of cognition that takes place without any influence of language seems to be

³ The first chair of philosophy was held by Twardowski, and the second by Mściśław Wartenberg.

a castle in the air. Also: the choice of language determines the way we acquire knowledge of reality. This led him to the view labelled as “radical conventionalism”. In order to justify this kind of view, Ajdukiewicz needed a certain conception of meaning. In this period, he also developed Leśniewski's conception of semantic categories and laid the foundations for categorial grammar. Finally, motivated by Łukasiewicz's programme on the one hand, and the intellectual exchange with Rudolf Carnap on the other, Ajdukiewicz explored the range and limits of formal methods in philosophy.

Language without Semantics

To provide a suitable background for his radical conventionalism, Ajdukiewicz needed a properly specified concept of meaning⁴. However, he was aware of the paradoxicality of semantic concepts. That is why he proposed the construction of a concept of meaning based only on syntax and pragmatics. Let us shortly characterise this semantic-free construction of meaning.

Ajdukiewicz starts with the following intuition. When can we assume that a certain person speaks a certain language? We are allowed to assume it when this person follows some directives (or rules) of this language. Ajdukiewicz distinguished three kinds of such rules:

- (1) Axiomatic meaning directives, which prohibit evading some sentences unconditionally. Sentences that we have to accept unconditionally are axioms or axiomatic theses of our language.
- (2) Deductive meaning directives, which prohibit evading some sentences if some other sentences were previously accepted.
- (3) Empirical meaning directives, which prohibit evading sentences (to be specific – empiric sentences) in the face of some experience data.

In languages of deductive systems, only directives of types (1) and (2) occur. Empirical languages also require rules of type (3). Let us note that the directives are negative in form (they are in fact “prohibitions”).

By taking categorial grammar as a syntax, Ajdukiewicz then composes tableaux representing the meaning connections between expressions, and defi-

⁴ Nota bene. Initially, Ajdukiewicz wanted to publish in “Erkenntnis” only one longer article containing both his conception of language and his radical conventionalism. It was Carnap who advised Ajdukiewicz to divide his study into two parts, which were both published in 1934 ([1934] 1978a; [1934] 1978b). The reasons for the division were purely pragmatic (space limitations of the journal). However, because of this separation, Ajdukiewicz's conception of meaning functions more independently and is often developed without its epistemological context (see, for instance, Grabarczyk 2019).

nes direct and indirect semantic connections of this kind. Simplifying, if two expressions occur in the same element of semantic directive, then they are directly semantically connected. If there is a sequence of expressions A_1, \dots, A_k such that there is a direct connection between every two adjacent expressions of this sequence, then A_1 and A_k are indirectly connected. A little metaphorically one may say that the meaning of an expression is its “place” in such matrices, or that it is the way this expression is connected with other expressions of this language.

In the next steps of his construction, Ajdukiewicz uses concepts introduced to define coherent and closed languages. A language is coherent if every two expressions of this language are semantically connected (directly or indirectly). Ajdukiewicz rightly observes that if some expressions of a given language are not semantically connected with other parts of the language, then what we have is not one language but a hybrid whole with isolated parts. Now a language is closed if one may not add any expressions to it without changing the existing semantic connections. Suppose that we want to add an expression to such a language. If after such addition no new connections arise, then we get an incoherent language. But when after such addition new connections are also introduced, then all meanings have to be changed. Ajdukiewicz calls a set of expressions coherent and closed he calls a “conceptual apparatus”, and a set of theses of this language was labelled by him as a “picture of the world”. Only this whole construction served to justify the radical conventionalism standpoint.

There is, however, no point in discussing this construction in detail here. What is important here is the fact that Ajdukiewicz noticed the analogies between languages and deductive systems. Or even more: he stated that languages, from a certain point of view, simply function just like deductive systems.

Semantic Theory of Knowledge

In the announcement of the 1936 Philosophical Congress in Cracow, a group of subjects was selected as the focus of the conference. Among these subjects, there was the application of logic to philosophy. Presenting SVTI in Cracow, Ajdukiewicz openly refers to this theme of the congress:

I intend to demonstrate here the great importance of contemporary logic for a satisfactory formulation and solution of central issues handed down to us by philosophical tradition (Ajdukiewicz [1937] 1978, p. 140).

It is easy to notice that in introducing this subject, a reference was made to Łukasiewicz’s programme announced nine years earlier during the congress in

Warsaw. What is interesting, in 1927, Łukasiewicz pointed to the issues of the theory of cognition as especially problematic from the point of view of logical correctness.

One of the reasons why philosophy is not scientific seems to be that logic has been neglected by modern philosophers. Rather than perfect this field, passed on to us by ancient philosophers, and intelligently cultivated in the Middle Ages, modern philosophers, with only the exception of Leibniz, have directed their attention at obscure and unproductive topics concerning the “theory of cognition” (Łukasiewicz [1928] 2022, p. 21).

Maybe that was one of the reasons for Ajdukiewicz's investigations into the application of logic in epistemology. For sure, he repeats the opinion of Łukasiewicz about the poverty of previous philosophers, who “lacking this invaluable instrument [namely mathematical logic] were unable to conceptualize precisely the results of often perspective and subtle intuitions” (Ajdukiewicz [1937] 1978, p. 141).

Let us now look at various aspects of SVTI, starting with the programme of the semantic theory of knowledge. In further paragraphs, we will focus on the refutation of (transcendental) idealism, and the method used in this argumentation.

Ajdukiewicz starts with an observation about the philosophical significance of the new logic. In particular, he declares that numerous results of logic may be understood as contributions to ontology or “first philosophy” in Aristotle's sense. He emphasises numerous applications of set theory, and states that Leśniewski rightly called one of his logical systems “ontology”:

The formal schemata developed in this theory enable us to give an adequate construction of the fundamental concepts used in everyday life and in science and whose oversimplified treatment has often been the source of errors and confusion in philosophy (Ajdukiewicz [1937] 1978, p. 140).

Next, Ajdukiewicz's notices that if logic contributes to ontology, then metalogic may contribute to the theory of knowledge or epistemology. In order to see how this contribution works, another step should be made. We need to interpret epistemology semantically. According to Ajdukiewicz, in the semantic theory of knowledge:

the epistemological problems are programmatically studied from the point of view of language as a system of expressions endowed with meanings (Ajdukiewicz [1937] 1978, p. 142).

In this approach, knowledge in the logical sense, namely composed of the Bolzanian “*Sätze an sich*” or the “products” of thinking in Twardowski's sense, may be understood as meanings of a set of sentences. Thanks to that identification, for any sentence about judgements there is an analogous sentence about the sentences:

The fact that knowledge in the logical sense consists of meanings relative to the language implies that for any sentence about judgements or concepts (in the logical sense) there exists an equivalent sentence about sentences or terms whose meanings are those judgements and concepts. So, for example, sentences about the relations of consequences between or about the relation of inconsistency, etc. between judgements are equivalent to sentences asserting suitable relations between the sentences whose meaning are those judgements (Ajdukiewicz [1937] 1978, p. 141).

Thus understood epistemology is a set of sentences about sentences (equipped with meanings), their properties, and relations between them. This is how it works: if logic is formal ontology (or at least contributes to it), then metalogic is (or contributes to) epistemology:

There is a close relation between the semantic theory of knowledge whose statements concern languages as systems of expressions which determinate meanings on the one hand and metalogic, i.e. the theory of deductive systems, on the other hand (Ajdukiewicz [1937] 1978, p. 144).

The scheme of analogy noticed by Ajdukiewicz is presented in Figure 1.

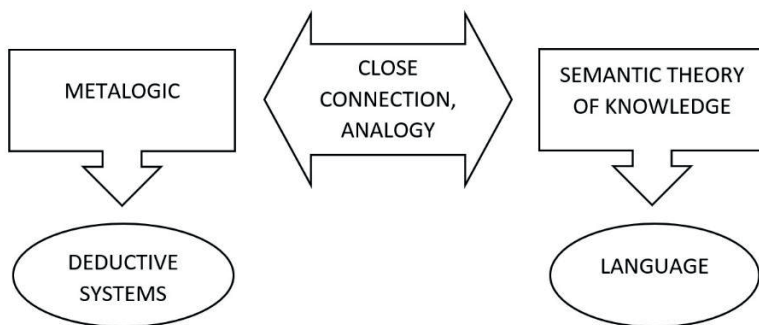


Figure 1. Semantic Theory of Knowledge

Refutation of Idealism

Now we are ready to present the steps of Ajdukiewicz's refutation of transcendental idealism presented in SVTI. Five steps may be distinguished in his argumentation.

In stage one, Ajdukiewicz looks for a statement that expresses the analysed epistemological thesis of idealism. From among various versions of idealism, he chooses Heinrich Rickert's formulation as relatively understandable. Rickert's transcendental idealism thesis reads: "Reality is nothing but a correlate

of the transcendental subject”, and the content of the transcendental subject is defined by transcendental norms of absolute validity, since, in this approach, the truthfulness of judgements depends on whether they conform to those norms. Ajdukiewicz noticed analogies between Rickert's norms and “his” axiomatic, deductive, and empirical rules of language.

Finally, Ajdukiewicz presents Rickert's thesis as:

(TI) All true statements about reality are dictated by transcendental norms.

At stage two, in order to identify the value of (TI), Ajdukiewicz looks for a certain analogue of the language in which (TI) was formulated. Given that semantic theory of knowledge one allows to treat epistemological sentences as sentences about languages, and given that languages are (from some point of view) deductive sentences, Ajdukiewicz chooses the language of metalogic as the language in which (TI) may be paraphrased.

Stage three consists in the formulation of the paraphrase of (TI) in the language chosen in stage two. Ajdukiewicz draws an analogy between the concept of transcendental subject and the concept of “theorems of the axiomatic system constructed from the expressions of the language of natural sciences and determined by the rules of direct consequence of that language” (Ajdukiewicz [1937] 1978, p. 150).

In the end, (TI) paraphrased into the language of metalogic is formulated as follows:

(TI*) All true statements of natural sciences are logical consequences of the axioms adopted in these sciences.

At stage four, Ajdukiewicz uses some metalogical theorems to evaluate (TI*). He refers to Tarski's dissertation on truth and states:

An analysis of the sense of the term “true sentence” has been recently given by Dr Tarski in his treatise *The Concept of Truth in Formalized Languages*. [...] Dr Tarski solves it [that is, this problem] in an extremely simple way. [...] If the term “true sentence” is used in such a way that the metalogical law of excluded middle is valid, then – if the deductive system is incomplete – not all true sentences in the language of the system under consideration are its theorems. A system is incomplete if in its language there is a sentence such that neither that sentence nor its negation is a theorem of a system. The metalogical law of excluded middle states that of two contradictory sentences one is true. If this principle is accepted, then for any incomplete system we shall have to conclude that not all its true sentences are its theorems. For if a system is incomplete then there will be in its language two contradictory sentences neither of which is a theorem of the system and yet – according to the metalogical principle of excluded middle – one of them is true (Ajdukiewicz [1937] 1978, p. 147).

This evaluation consists of the following points:

- (1) The axiomatic system of arithmetic is incomplete, i.e. not all true sentences about objects of the domain of arithmetic are logical consequences of the axioms adopted in this system (simplifying: set of theorems $\dot{=}$ set of truths).
- (2) Arithmetic is a part of every theory of natural sciences.

Thus:

- (3) Every axiomatised theory of the natural sciences is incomplete.

This is how Ajdukiewicz justifies the refutation of (TI*).

At stage five, Ajdukiewicz comes back to the initial thesis (TI). If (TI*), being an analogue of (TI), turned out to be false, then also (TI) should be refuted.

In consequence, some true theses of the natural sciences are not logical consequences of the axioms adopted in these sciences. Therefore, the thesis of transcendental idealism – as contradictory to the above consequence – is false.

Summarising this result, Ajdukiewicz states:

One of the fundamental problems of the classical theory of knowledge, *viz.* the problem of transcendental idealism, when translated into the semantical meta-language turns into a problem whose solution on the basis of meta-logic is almost trivial (Ajdukiewicz [1937] 1978, pp. 146–147).

The Method of Paraphrases

Let us now concentrate on the methodological aspects of SVTI. The procedure applied by Ajdukiewicz, called in the literature “the method of paraphrases” or “the method of semantic paraphrases”, may be presented in general as follows⁵:

The aim of applying the method of paraphrases is the evaluation of a certain philosophical thesis *T*. This procedure comprises the following stages:

- (1) Analysis of the initial statement *T* formulated in the language *L*. Looking for the best possible form of a given statement in the original language.

⁵ The procedure applied in SVTI was variously interpreted and reconstructed; see, among others, Woleński (1989), Jadacki (1995), Będkowski (2019), Kosecki (2019), Będkowski et al. (2020).

- (2) Choice of the language of paraphrase. This language, let us say L^* , should be somehow “better” than the language L .
- (3) Paraphrasing T into T^* formulated in the language L^* . In doing so, appropriate analogues of concepts must be selected.
- (4) Justification of the paraphrase T^* . This step consists in showing that there is indeed a sufficiently “strong” analogy between L and L^* .
- (5) Evaluation of T^* . It is about proving that T^* is true/false/contradictory.
- (6) Applying the conclusions of (5) to the initial thesis T .

The most methodologically suspicious moment in this procedure is the justification of the paraphrase (4). How to justify the hypothesis that two statements formulated in two different languages are “equivalent” or “analogous”? How can we know when we may apply conclusions about one sentence to another sentence? The problem arises especially when the paraphrased thesis is formulated in a form that allows many various interpretations.

Ajdukiewicz was fully aware of this difficulty. In a short article titled *On the Applicability of Pure Logic to Philosophical Problems* (Ajdukiewicz [1934] 1978c) he emphasised that – contrary to appearances – sentences of natural language (in which traditional philosophical theses are usually expressed) cannot be considered a kind of “mechanical” substitution of formulas of the classical logical calculus. For example, if we have a propositional calculus formula of the type “ $(p \wedge q) \rightarrow p$ ”, other logical formulas may be substituted for variables in this formula (e.g. “ p ” may be substituted with “ $r \vee s$ ”). However, it is not allowed to substitute here sentences of natural language (such as “Socrates is a man”); for one would first have to find an adequate paraphrase of logical connectives in natural language (it is known that, e.g., “or” is *not* such an adequate paraphrase of a logical disjunction). In short, it would be necessary to construct an adequate logic of natural language.

Nevertheless, ultimately, tools for the justification of a paraphrase should be found outside logic. Ajdukiewicz believed that one can use here a kind of phenomenological intuition, or the method of semantic conventions/postulates (in Leśniewski's sense).

According to Ajdukiewicz, for these reasons, his refutation of idealism is not fully conclusive. He wrote:

I *conjecture* that in this way one solves the problem which was at the heart of the disputes between philosophers over the so-called question of transcendental idealism. I cannot be *sure* of this, however. For neither am I an experienced scholar of transcendental idealism nor do I believe that anyone could give a precise interpretation of their vague and unclear doctrines without having doubts as to whether that interpretation matches the intended meaning (Ajdukiewicz [1937] 1978, p. 150).

Ajdukiewicz states only: *if* his interpretation of Rickert is correct, then transcendental idealism should be refuted⁶.

Because of these various difficulties, Ajdukiewicz's result was assessed differently. In his *Foundations of Mathematics*, Evert Willem Beth (1959) states that Ajdukiewicz's argument against idealism is conclusive. Rosiak (1993) argues for the opposite. Chrudzinski (2016) shows that Ajdukiewicz's analysis undeniably fits into contemporary discussions.

Let us now look at Ajdukiewicz's result from the point of view of Łukasiewicz's programme (1927). In the procedure Ajdukiewicz applied, there are some easily noticeable similarities to the steps recommended by Łukasiewicz. These are: the choice of a traditional philosophical problem and the use of mathematical logic to address it. However, Ajdukiewicz's approach to idealism does not consist in the axiomatisation of a previously selected set of "reasonable" philosophical theses. It consists in the use of some "ready" (meta) logical results to assess a certain "important" philosophical thesis (whose name ends in "-ism"), based on the noticed analogy between philosophical statements and the approach of logic. In this sense, Ajdukiewicz's proposal is an essential supplementation of Łukasiewicz's programme. Such a procedure may be applied in cases when axiomatisation is not (yet) possible because there is no closed set of philosophical theses susceptible to such axiomatisation.

On the other hand, with regard to the individual "-isms" paraphrased with the aid of his method, Ajdukiewicz was an optimist. He concluded SVTI thus:

I have also tried to show that the conceptual apparatus of contemporary logic makes the solution of [...] [some classical problems of philosophy] simple. I shall be glad if my arguments prove convincing and if they encourage others to approach classical problems of philosophy in a similar manner (Ajdukiewicz [1937] 1978, p. 153).

Ajdukiewicz himself came back to the problems analysed in SVTI in his paper *Epistemology and Semiotics*, also published originally in "Przegląd Filozoficzny". There, Ajdukiewicz also discusses once more the analogy between epistemology and semiotics and his idea of the semantic theory of knowledge, and he poses the question of whether one could draw a metaphysical conclusion from epistemological investigations (on the idea and development of the semantic theory of knowledge – see Olech 2020).

Let us emphasise that although Ajdukiewicz's idea of semantic paraphrases was new, this procedure taken in a more general sense had been used as a philosophical method in the LWS from the beginning. Commenting on Carnap's idea of translation of problems into the formal mode of speech, Ajdukiewicz made the following remark:

⁶ On the margin, let us note that in the paper *Epistemology and Semiotics* ([1948] 1978), Ajdukiewicz also argues with Berkeley and states that his form of idealism is based on his acceptance of some inappropriate meaning postulates.

Thanks to this kind of paraphrase, the issues that have been the eternal ballast of philosophy [...] find their way to an indisputable solution. This is a result of great importance. It should be noted, however, that the author of the idea of this paraphrase and its application to numerous issues was a Pole, Prof. [Stanisław] Leśniewski, and that in Polish philosophy this idea was used many years before the Viennese to solve numerous difficulties (Ajdukiewicz [1946] 1965, p. 18, own translation).

Leśniewski was definitely a master of paraphrases, both in the mathematical-logical period of his activity, and in the previous, philosophical-semiotic, period. However, we may take one more step back to Twardowski, who also used (informal) paraphrases in some of his most important philosophical works. Let us mention, for instance, his paraphrases of elliptic or amphibolic statements in his argumentation against relativism (1901), and his analysis of the word “nothing” presented in his habilitation thesis as early as in 1894⁷. This proves, once again, the general methodological unity of the LWS accompanied by the evolution of analytical tools.

Closing Remarks

According to a family anecdote, Ajdukiewicz first encountered idealism in Berkeley's form as a teenager. He then wanted to introduce his mother to this conception. Ajdukiewicz pointed to a stove and said: “Mother, can you see this stove?” “Yes”. “Is it here?” “It is”. Now, Ajdukiewicz turned his mother around. “And now, can you see the stove?” “No”. “So there is no stove” – he said. His mother's reaction was impulsive: “Kazik, du bist dumm wie die Nacht und eingebildet wie die Möglichkeit. The stove is there whether I see it or not”⁸ (see Zieliński 2013, pp. 22–23). Perhaps that was the beginning of Ajdukiewicz's aversion to idealism. It took him, however, a long time to find a disputable form of this view and the appropriate method to refute it.

An influential analysis and argumentation against transcendental idealism was not the only result of Ajdukiewicz's semantic turn. Another important aspect of SVTI was to show that the new logic and metalogic may contribute not only to ontology but also to resolving or at least clarifying some epistemological problems.

Ajdukiewicz applied the procedure usually called “the method of paraphrases”, which is complementary to other methods used in analytic philosophy,

⁷ According to van der Schaar (2017), in this case Twardowski preceded Carnap's analyses.

⁸ In reality, Ajdukiewicz's mother, who was an Austrian married to a Pole, spoke a mix of German and Polish of course.

such as analysis of concepts and axiomatisation. Being aware of the difficulties of this procedure, Ajdukiewicz constantly emphasised that formal methods have to be supplemented by informal ones. He wrote:

Before our thoughts reach the level of precision which allows clear formulation of axioms, we can already see, vaguely and unclearly, some particular concepts that will be the foundation of this axiomatic system. Seeing this concept clearly requires considerable mental effort, which in no way can be called “thought poetry”. The work of philosophers lies largely within this pre-axiomatic domain. It may not be called “scientific work”, but its value for scientific cognition cannot be denied (Ajdukiewicz [1946] 1965, p. 28, own translation).

Ajdukiewicz’s greatest contributions to philosophy lay precisely in the pre-axiomatic, or even extra-logical domain.

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A n n a B r o ż e k

Ajdukiewicz’s Semantic Turn

Keywords: *K. Ajdukiewicz, idealism, Lvov-Warsaw School, metalogic, paraphrases, semantics*

Ajdukiewicz called his article *Problemat idealizmu transcendentálnego w sformułowaniu semantycznym* [The Semantic Version of Transcendental Idealism], published in “Przegląd Filozoficzny” in 1937, a “turning point” of his philosophical development. The aim of the paper is to present various aspects of this turn. Firstly, the historical and philosophical background of the 1937 paper is sketched. It includes the metaphilosophical position of the Lvov-Warsaw School, and the development of methods applied in this group. Secondly, Ajdukiewicz’s ideas up to 1937 are outlined in order to present what the semantic turn consisted in. Next, the program of the semantic theory of knowledge is sketched, and the steps of Ajdukiewicz’s argumentation against transcendental idealism, with an emphasis on the use of metalogical and semantic results, are presented. Finally, Ajdukiewicz’s proposal is discussed from the methodological point of view.