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AJDUKIEWICZ, HUSSERL AND TARSKI— CONCERNING THE SEMANTIC THEORY OF KNOWLEDGE

SUMMARY: This article is polemical. It argues with those philosophers who see, in the semantic theory of knowledge of Kazimierz Ajdukiewicz, the significant and exclusive influence of Alfred Tarski's semantic output. Listening to these philosophers, one gets the impression that they have overlooked the fact that the term "semantics" meant one thing in the case of Ajdukiewicz, presenting the semantic theory of knowledge, and something different in the case of Tarski, presenting the semantic theory of truth. There is another difference, related to the abovementioned, and fundamental in the case of both these logicians, namely their different approach to language, which seems to escape the attention of those who write about the semantic theory of knowledge. Ajdukiewicz's approach was intensional, while Tarski's approach was extensional: for the first of them, the intensional interpretation of language was basic, as for the second, was the extensional interpretation. The philosophers with whom I argue overlook one more fact, namely the impact, difficult to overestimate, that the intentional theory of language of Edmund Husserl had on the emergence of the semantic theory of knowledge. This article tries to restore Tarski's real role in the matter referred to in the title, and do justice to Husserl: after all, without his philosophy of the semantic theory of knowledge, as a metaepistemological project, it would not have come to be. It was only in the implementation of this project that some of the achievements of Tarski's semantics were used.

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1. TERMINOLOGICAL ISSUES

If one wanted to characterize the meaning which the word “semantics” had in Polish philosophy at the turn of the 1920s and 1930s, and during the 1930s, one should first refer to the *Elementy* [Elements] of Tadeusz Kotarbiński (1986) the first edition of which came out in 1929. This well-known and influential academic textbook at the time, which is also a lecture on the original views of its author, begins with comments on language—that is how its first part is titled: *Uwagi o języku* [Notes on Language]. The first chapter of that part is entitled *O stosunkach semantycznych, jak wyrażanie, oznaczanie i inne* [On Semantic Relations, Such as Expressing, Designation and Others]. The semantic relations are, therefore, the relations of expression and designation mentioned here, as well as the relations of meaning, connotation, replacement and representation. According to the author of *Elements*, the word “semantics” carries those senses that we now call syntactic, semantic and pragmatic meanings (Kotarbiński, 1986, p. 17n). In the same chapter, speaking about semantics, Kotarbiński states that “semantics is called the science of the meaning side of language” (ibid., p. 28), and elsewhere in this chapter, writing about semantic categories, he states that “from the Aristotelian categories it is necessary to distinguish between the meaning categories otherwise called ‘the semantic categories’” (ibid., p. 66), which, refers to those fragments of the second volume of Husserl’s *Logical Investigations* (2000) in which Husserl writes about pure grammar, and strictly: about the *a priori* laws binding in complexes meanings, as well as important types of meanings that single meanings fall under. These important types of meanings are categories of meaning [*Bedeutungskategorien*], which in Husserl’s analyses play a major role in creating uniformly meaningful complexes of meaning or—as we would now say—play a major role in creating syntactically coherent expression complexes (Kotarbiński, 1986, p. 66; Husserl, 1928, p. 318 f.; 2000, p. 398).

Nowadays, these categories of meaning, called by Kotarbiński “semantic categories”, are called “syntactic categories” and are distinguished from semantic categories—in the case of the latter, the types of objects constituting the denotation of expressions belonging to a given semantic category are taken into account. While talking about this contemporary distinction, one should bear in mind that we also still meet with the use of the term “semantic category” in which the expression “semantics” is taken in a broad sense—as a name referring to the general theory of signs, now called “semiotics”. With this understanding of the term “semantics”, the term “semantic category” refers to both a syntactic category and a strictly understood semantic category.

Ajdukiewicz used the term “semantics” in the same way, i.e. also broadly, when he wrote about semantic categories on the occasion of his review of *Elements* and when he said that he did not agree with Kotarbiński’s postulate stating the need to “turn all sentences containing noun phrases into sentences containing noun phrases of one and the same semantic category” (Ajdukiewicz, 1960a, p. 86) and also when he referred to logical-linguistic phenomena like meaning and expressing and determination as semantic (Ajdukiewicz, 1960a, pp. 86–94). In the lectures on logical semantics which Ajdukiewicz gave in the autumn of 1930 at the Jan Kazimierz University in Lviv, during which he first used his fractional notation, he also spoke about semantic categories (Ajdukiewicz, 1993, p. 165).

We meet the same broad understanding of the term “semantics” in Ajdukiewicz’s thesis entitled *O znaczeniu wyrażeń* [On the Meaning of Expressions], in which we read that the term “semantic function” introduced by him in this work refers to every property owned by the expressions as such, with the exception of their external side (Ajdukiewicz, 1960c, p. 104). Hence the fact that Ajdukiewicz described the issue of the meaning of expressions to which this work was devoted as one concerning only one, though special, semantic function of the expressions (*ibid.*, p. 104).¹

¹ For the sake of clarity, I would like to point to the real and extremely important motivation that prompted Ajdukiewicz to write this essay: “In entering into this topic—wrote Ajdukiewicz—we would like to point out that this topic is not of interest to us as a chapter in the scientific dictionary. We are not only concerned with presenting and criticizing someone else’s definition of meaning and displaying our own. We are talking about something else, which we can only vaguely signify here. Here we think that language plays a certain and very important role in the cognitive process. Different views on meaning reveal the rele-

Ajdukiewicz writes about semantic categories as syntactic categories, or—in Husserl’s language, and later Leśniewski’s—meaning categories, in the articles *W sprawie “uniwersaliów”* [On the Problem of Universals] (1960e, p. 197) and *Definicja* [Definition] (1960d, p. 243). In the same way, that is to say broadly, Ajdukiewicz understands the term “semantics” in the paper entitled *Problemat transcendentálnego idealizmu w sformułowaniu semantycznym* [Semantic Version of the Problem of Transcendental Idealism] (1960h), in which the term appears to be synonymous with the modern term “semiotics”, and this is because the discussion of this work includes all three components of contemporarily understood semiotics, i.e. the syntactic, semantic and pragmatic. In concluding these terminological remarks, I would like to mention that the term “semasiology” functioned at that time as synonymous with “semantics”, understood in this way. It was used by Ajdukiewicz and Alfred Tarski, as well as other philosophers and logicians of that time (Ajdukiewicz, 1960f, p. 145; Tarski, 1995b, pp. 11–12).

The above historical and terminological remarks are to serve the correct understanding of the term “semantics”, appearing in Ajdukiewicz’s essay *Problemat transcendentálnego idealizmu w sformułowaniu semantycznym* [Semantic Version of the Problem of Transcendental Idealism] (1960h), which is crucial for this article. In its original form, i.e. as a shorter paper, it was presented by its author in 1936 at the 3rd Polish Philosophical Congress in Krakow, and in the printed version—taking into account the discussion that took place after its presentation—in 1937. The correct understanding of the term “semantics” is a broad one, referring to the general theory of sign. It is therefore synonymous with the modern understanding of the term “semiotics”, which contains three meanings: syntactic, strictly semantic and pragmatic. These are the three-fold meanings in Ajdukiewicz’s essay that appear under the common name “semantics”—referring to semantics broadly understood.

vant view of this cognitive role of language. For some, this role is rather an aside. Cognition could be had without the help of language, and language only acts as a means to consolidate and communicate our cognition to others. For others, this role is important, words of language present us with objects that, unlike words, cannot be presented at all. This or that position on what the meaning of words consists in is more or less closely related to the cognitive role of language. When dealing with the concept of meaning, we think that we can shed some light on this role” (ibid., p. 105).

For this article, the essay is crucial because it was there that Ajdukiewicz presented the metaepistemological project of the semantic theory of knowledge and its example implementation, which in the essay were jointly referred to as the “semantic theory of knowledge”.² However, bearing in mind the way the term “semantics” was used at the time, it should be—translating the name of this idea and its implementation into a modern name—the “semiotic theory of knowledge”, since the theory of knowledge understood in this way, covering the project and its implementation, involves Ajdukiewicz’s threefold meaning: syntactic, strictly semantic and pragmatic. However—and I would like to emphasize this point clearly—Ajdukiewicz formulated his metaepistemological project of the semantic theory of knowledge without involving the concepts of contemporary semantics. So, if one wanted to define the project itself—from the point of view of the modern understanding of the term “semiotics”—it should be called a “syntactic-pragmatic project”. However, the implementation of this project was semiotic, i.e. one that, in addition to syntactic and pragmatic concepts, also involved a contemporary semantic concept—strictly: the concept of “truthfulness” occurring in the metalogical formulation of the principle of the excluded middle.

One more equally important remark should be added to these terminological considerations: saying that in the 1930s Ajdukiewicz used the term “semantics” in a broadly understood way, the current equivalent of which is the term “semiotics”, I could mislead the reader. This error would arise if the reader understood my words in such a way that Ajdukiewicz used in his research (until the aforementioned 1936) contemporary semantic concepts, since these concepts fall—in addition to syntactic and pragmatic concepts—into the concepts of contemporarily understood semiotics. This was not the case: at that time, Ajdukiewicz did not use the concepts of strictly understood semantics because of their antynominal character (cf. Ajdukiewicz, 1960b; Maciaszek, 2013; Maciaszek, 2015; Grabarczyk, 2019); which does not mean that his logical-linguistic or logical-linguistic-epistemological or logical-linguistic-ontological research, or such research of other philosophers, would not be described or termed “semantic research”. However, the word “semantics” meant to him, at that time and in

² The metaepistemological project of the semantic theory of knowledge can also be referred to as the “metaepistemological programme” and this is how I sometimes describe it in this paper.

such cases, the same as the word “semasiology” or “general (logical) theory of language”. It is worth mentioning that Ajdukiewicz first used the term “semantics” in the modern understanding only after the war, in an article from 1946 entitled *O tzw. neopozytywizmie* [On So-called Neopositivism] (Ajdukiewicz, 1965d, pp. 19–20).

I devote so much space to the above-mentioned terminological issues because I would like to point out that one should not directly associate the semantic theory of knowledge of Ajdukiewicz with Tarski’s semantic theory of truth, strictly: these two theories should not be directly connected, which would amount to the statement that the semantic theory of knowledge is a derivative of the semantic theory of truth. The term “semantics” appearing in the name “semantic theory of knowledge” and in the name “semantic theory of truth” has a different meaning each time. In the case of the “semantic theory of knowledge” it has the former, broad sense, while in the case of the “semantic theory of truth” it has the strict, contemporary sense. These two semantic-epistemological theories, the theory of Ajdukiewicz and that of Tarski, share not only terminological issues, but something more, something fundamental, which I shall discuss in more detail. Let two opinions which contribute to the mistaken direct connection of Ajdukiewicz’s semantic theory of knowledge with Tarski’s semantic theory of truth be the introduction to the consideration of these differences. First, I shall present these opinions, and then—arguing against them—I shall present these fundamental differences.

2. THE VIEWS OF JAN WOLEŃSKI AND ANNA JEDYNAK ON THE SEMANTIC THEORY OF KNOWLEDGE

2.1. The first opinion is that of Jan Woleński. In his well-known and influential monograph entitled *Filozoficzna szkoła lwowsko-warszawska* [The Lviv-Warsaw Philosophical School] (1985), in the chapter devoted to Ajdukiewicz’s epistemology, bearing the title *Logic, Semantics and Knowledge—the Epistemology of Kazimierz Ajdukiewicz*, and, to be exact, in his sixth paragraph entitled *Semantics, Epistemology, Ontology*, Woleński writes:

As a radical conventionalist, Ajdukiewicz did not derive any ontological conclusions from his epistemology. The change took place around 1936, when Ajdukiewicz became convinced of the importance of Tarski’s semantics. The first testimony to Ajdukiewicz’s new attitude towards the rela-

tion 'epistemology-ontology' was the paper he gave at the 3rd Polish Philosophical Congress (Krakow 1936)—the full text of the paper was published in 1937 [*Semantic Version of the Problem of Transcendental Idealism*—A.O.]. Ajdukiewicz considers using semantics to critique transcendental idealism [of Rickert—A.O.]. (Woleński, 1985, p. 203)

And in the last sentence of this paragraph, in which Woleński analyses Ajdukiewicz's application of semantic procedures for the explication and rejection of another idealism, this time Berkeley's subjective idealism, the author states that "[...] it is worth noting that semantic epistemology falsifies the opinion of all those who think that the semantic theory of truth is philosophically neutral" (ibid., p. 206).

To these comments of Woleński, from the monograph, we must add one that comes from a volume he published twenty years later *Epistemologia. Poznanie-prawda-wiedza-realizm* [Epistemology. Cognition-Truth-Knowledge-Realism] (2005). In chapter nine, in which the author considers the philosophical consequences of Tarski's semantic definition of truth, Woleński states that under the influence of this definition

[...] three prominent philosophers of the 20th century [Ajdukiewicz, Carnap and Popper—A.O.] fundamentally changed their philosophical views [...]. Ajdukiewicz abandoned radical conventionalism, Carnap moved away from the view that language theory must be limited to syntax, and Popper found a place for the concept of truth in the methodology of the sciences. (Woleński, 2005, p. 272)

2.2. The second view comes from Anna Jedynak. In her book on Kazimierz Ajdukiewicz (2003), in the chapter entitled *Metaphysics and Semantic Epistemology*, she writes:

Ajdukiewicz was drawn towards undertaking the fundamental metaphysical issues regarding the nature of reality, which for centuries had been driving philosophy. At the same time, he felt a reluctance towards free reflections, which ended with empty-worded conclusions, and such reflections dominate in metaphysics. So Ajdukiewicz's metaphysics was far from traditional. Above all, he wanted to base metaphysics on some solid foundation that would protect it from being mere empty words. He found this basis in epistemology, i.e. the theory of knowledge (which he did not include in metaphysics). He reasoned as follows: all knowledge is expressed in language, and therefore the science of cognition can be reduced to learning about the linguistic results of cognitive activities, i.e. sentences. On the other hand, semantics, assuming the achievements of logic, treats of sen-

tences, their mutual relationships and their relation to reality. Ajdukiewicz already felt at home in this area: after all, semantics and logic provide substantiated solutions. He presented the programme of semantic epistemology, or semantics-based epistemology, and implemented it by considering various issues in the field of traditional philosophy. On the other hand, he decided to base his research into the nature of reality on semantic epistemology. So he did not freely consider existence, but he drew conclusions about existence from conclusions about knowledge, taking into account the achievements of semantics and logic. [...] Metaphysics based on epistemology is one of the two (next to the cognitive role of language) main currents of his philosophical work. (Jedynak, 2003, p. 57).

3. COMMENTS ON THE WOLEŃSKI AND JEDYNAK'S VIEWS

3.1. Woleński's and Jedynak's quoted views are not here taken out of contexts that would change the meaning of the words contained within them. The meaning of Woleński's words is that due to the semantic definition of Tarski's truth, Ajdukiewicz abandoned the epistemological concept of radical conventionalism, from which he did not draw ontological conclusions, after which, in 1936, he appeared at the Third Polish Philosophical Congress with another epistemological proposition, which he described as a "semantic theory of knowledge", from which he could already draw such conclusions. Further, that Ajdukiewicz's semantic epistemology falsifies the opinion of all those who think that Tarski's semantic definition of truth is philosophically neutral.

In giving a polemical commentary on Woleński's statement, I shall start with the polemically shortest case—radical conventionalism. It is true—as Woleński states—that Ajdukiewicz, as a radical conventionalist, did not derive any ontological conclusions from his epistemology, because he did not programmatically say anything about the world, but only about the linguistic picture of the world, because semantic concepts, in the modern understanding of the term, were antynominal at the time when Ajdukiewicz wrote his conventionalist works. However, it is difficult to agree with Woleński's statement that Ajdukiewicz gave up radical conventionalism under the influence of Tarski's semantic definition of truth. He abandoned it under the influence of Tarski's critical remark aimed at the directival definition of the meaning of expressions—a remark not related to the semantic definition of truth. Ajdukiewicz's acknowledgment of this critical remark as apt meant that he could no longer, as he had before, define the equality of expressions equitably, and this in turn pre-

vented him from defining the meaning of expressions as an abstraction class of synonymous expressions, i.e. as the common property of these expressions. And such a definition, together with the concept of coherent, closed and non-translatable languages, played an important role in the syntactic-pragmatic foundations of the concept of radical conventionalism. Therefore, since Ajdukiewicz decided that these foundations raised doubts—although there are serious reasons why he could have not done so—he consequently decided that doubts must also be raised about the epistemological concept built on them.³

As for the semantic epistemology referred to in Woleński's statements, the reader of these statements might mistakenly believe that this epistemology was inspired by Tarski's semantic definition of truth. Speaking about the semantic theory of knowledge, one must remember that it is—

³ Ajdukiewicz adopted the following definition of equivalence of meaning: given two expressions have the same meaning in language J always and only when the rules of sense of this language (also called sense directives or acceptance directives) do not change when these expressions are changed, i.e. when the rules of sense of this language say the same about both expressions. Tarski's critical remark, which he made to Ajdukiewicz in an oral conversation shortly after the publication of the work *Sprache und Sinn* (1934), was to indicate an example from the functional calculus with identity which falsified one of the conditionals that constitute the above definition of equivalence, namely the conditional that if the rules of the sense of language J are unchanged by the repositioning of expressions of that language, then those expressions are synonymous. The second conditional stated that if two given J expressions are synonymous, then the rules of the sense of J that apply to them are unchanged (Ajdukiewicz, 1965g, pp. 396–397). As a reminder, I would like to mention that *Sprache und Sinn*, containing this definition of the equivalence of expressions, was the syntactic-pragmatic basis of radical conventionalism. This paper appeared in "Erkenntnis" 1934, vol. 4; reprinted in a translation from the German by F. Zeidler as *Język i znaczenie* [Language and Meaning] (Ajdukiewicz, 1960f, pp. 145–174). The heart of Tarski's critical remark was to point out an example (from the functional calculus with identity) in which two expressions are synonymous—from the point of view of Ajdukiewicz's theory of meaning—and yet they are not equivalent, i.e. they have different denotations. Adam Nowaczyk convincingly writes about the possibility of responding to Tarski's criticism of Ajdukiewicz's theory of meaning in the article *Dyrektywalna teoria znaczenia, czyli dramat Filozofa* [Directival Theory of Meaning, or the Drama of the Philosopher] (Nowaczyk, 2006, see also Giedymin, 1978, pp. XIX–LIII).

firstly—a metaepistemological programme, and secondly—the implementation of that programme. As a metaepistemological programme, the theory of knowledge was not inspired by Tarski's semantic and logical results, and even—due to the different philosophies of language that these two logicians and philosophers accepted—could not have been so inspired. As for the realisation of this programme, which Ajdukiewicz presented at the aforementioned III Polish Philosophical Congress—presenting at once both the programme and its implementation—he used Gödel's theorem about the incompleteness of rich deductive systems and the metalogical principle of the excluded middle. This principle—that one of two contradictory sentences is true—is, as Tarski showed, a consequence of his semantic definition of truth. In short, without a semantic definition of truth, Ajdukiewicz could not, in a scientifically responsible manner, use this principle in his first implementation of the semantic theory of knowledge programme. It consisted in demonstrating the falsehood of Rickert's transcendental idealism; that reality is only a correlate of the transcendental subject. That, and only that, in the first implementation of the semantic programme of knowledge of Ajdukiewicz, involved the use of the results obtained by Tarski. Stating this, I ignore another, diametrical difference in the understanding of language of Ajdukiewicz and Tarski. Namely, that in this work, Ajdukiewicz also treated the language in which the thesis of transcendental idealism is expressed as a pragmatic and assertive deductive system (Ajdukiewicz, 1965a). Meanwhile, Tarski's approach to the language(s) or deductive systems was never pragmatic, but always apragmatic, and so, assertiveness, understood as a pragmatically understood acceptance of sentences, was out of the question. It be mentioned that Ajdukiewicz had always understood language as a system of expressions interpreted intensionally, governed by the rules of the acceptance of sentences, while Tarski put emphasis on extensional interpretation.

Woleński also writes in the quoted passage that Tarski's semantic definition is not philosophically neutral. Yes, I agree, but I would like to specify this general statement by Woleński, saying that this non-neutrality lies in the fact that the semantic definition of truth, or its consequences, can serve as the significant premise in arguments falsifying metaphysical idealism, but—it should be added—through a previously, and appropriately, carried out semiotic and logical explication of a given idealistic position. This is the case with both Ajdukiewicz's criticism of Rickert's idealism and his criticism of Berkeley's idealism. In short, the philosophical non-neutrality of Tarski's semantic definition of truth is not

non-neutrality—so to speak—outright, but it is so, provided that the idealistic position is expressed (paraphrased) in a semiotic-logical way. This is a strong condition, as it contains the question of the legitimacy of these explications—an issue that is philosophically interesting due to its hermeneutic non-triviality.

This conditional statement must be supplemented with another conditional statement—this time metaphilosophical—which states that metaphysical positions are a consequence of previously made epistemological decisions. This is the metaphilosophical position—as will be discussed below—Ajdukiewicz held. To conclude, Tarski's semantic definition of truth, and its consequences, are not philosophically neutral—in the sense: they are realistically and metaphysically involved—under two conditions: if in a semiotic-logical way the given idealistic thesis is expressed (paraphrased), and if the philosopher accepts epistemological metaphilosophy, proclaiming the derivative of metaphysical theses in relation to previously made epistemological conclusions. Without going into detailed considerations in this regard, I just want to mention that the epistemological philosopher—and that Ajdukiewicz was—finds himself in a favourable situation in this case. This is because he can use the analogy between two meta-theoretical disciplines: the theory of knowledge and the theory of deductive systems (metalogsics and metamathematics). The analogy is that an epistemological philosopher presents his theses about being from the point of view of previously made epistemological conclusions, while the theorist of deductive systems presents his theses about the referential side of these systems from the point of view of previously made conclusions regarding the wealth of the meta-language in which he discusses a given deductive system. Ajdukiewicz, being a logicizing philosopher, used this analogy.⁴

Two matters indicated in the above remarks deserve a broader treatment: the different approaches to language of Ajdukiewicz and Tarski, and the metaepistemological programme of the semantic theory of knowledge of Ajdukiewicz, which—if it was inspired by anyone—was

⁴ I write about this in *Semantycznej teorii poznania* [The Semantic Theory of Knowledge] (2014b, pp. 148–153, 169–180, 247–252). Speaking in the above paragraph about the consequences of the semantic definition of truth, I mean the metalogical principle of the excluded middle and Tarski's theorem on the indefinability of truth.

inspired by Edmund Husserl and his *Badania logiczne* [Logical Investigations] (2000). However, before I get to these matters, I shall first refer to the excerpt from the book by Jedynak.

3.2. Jedynak writes that traditional metaphysics is dominated by freely thought-out considerations ending with empty-worded declarations and that Ajdukiewicz practised metaphysics in a non-traditional way. Further, that Ajdukiewicz, in expressing his opinion on metaphysical matters, wanted to base metaphysics on a permanent foundation that would protect such statements against empty-wordedness, and that Ajdukiewicz found this basis in epistemology. I shall not argue with the author's statement that traditional metaphysics is dominated by freely thought-out considerations ending with empty-worded declarations—I shall just say that this statement raises some doubts. As for the non-traditional—as the author writes—approach of Ajdukiewicz to metaphysical issues, I would like to note that it has an esteemed tradition going back to Descartes; after all, Descartes is responsible for changing the metaphilosophical paradigm: from metaphysical to epistemological. Ajdukiewicz is part of this Cartesian epistemological paradigm, having, in addition to Descartes, such predecessors as Locke, Berkeley, Hume, Kant, Brentano, Twardowski, Rickert and Husserl. To the metaphilosophical question of which of the philosophical disciplines comes first, i.e. the one from which the philosopher should begin his philosophizing, Ajdukiewicz answered that it is epistemology. Thence the philosopher takes, for example, the structure of his well-known introduction to philosophy—*Zagadnienia i kierunki filozofii* [Issues and Directions of Philosophy] (Ajdukiewicz, 1949)—in which epistemology precedes metaphysics, as well as the layout of his *Głównych kierunków filozofii* [Main Directions of Philosophy] (Ajdukiewicz, 2011). This epistemological metaphilosophical orientation was not universal in the Lviv-Warsaw school, after all, it met with strong opposition from Jan Łukasiewicz. His harsh criticism of the philosophy of Descartes and Kant, motivated by the metaphysical metaphilosophical paradigm, is a significant expression of this.

Another statement by Jedynak contained in the quoted passage, requires comment, namely, that in which she states that Ajdukiewicz presented a programme of semantic epistemology, i.e. a programme based on semantics, and that he implemented it, undertaking various issues in the field of traditional philosophy, including issues of the nature of reality.

I would like to point out here briefly—because I shall talk about it more precisely later on—that this programme, which I call a “metaepistemological programme of the semantic theory of knowledge”, is precisely a metaepistemological programme and boils down to the conjunction of two statements:

First statement: Epistemological reflection on logically understood concepts and propositions, i.e. on logically understood knowledge, is equivalent to reflection on expressions and sentences whose linguistic meanings are these concepts and propositions.

Second statement: An epistemologist must treat these concepts and propositions as the linguistic meanings of expressions and sentences if he intends to speak of knowledge defined as to content.

Therefore, in the programme of the semantic theory of knowledge, there is no mention of semantics in the modern sense of the term, the sense which is understood in the Jedynak statement cited. What’s more, even this implicit semantics does not assume this programme, because it grows out of Ajdukiewicz’s syntactic-pragmatic theory of language, which I shall discuss in more detail. Meanwhile, Jedynak claims that the semantic epistemology programme was based on the contemporary understanding of semantics, i.e. that dealing with the referential side of language. As in the previous case, I would like to add that it was only while implementing this programme that Ajdukiewicz used the contemporary concept of semantics, i.e. the metalogical principle of the excluded middle, in which the truth of the sentence is mentioned. He used it because he intended to show that what the transcendental idealist Rickert says about the ontological status of the world is—with the proper understanding of the transcendental subject—wrong. For this and only for this was semantics involved in Ajdukiewicz’s analysis. All the rest of the analysis is made within the syntactic-pragmatic theory of language, in which language is interpreted intensionally and, moreover, conceived as an assertive-pragmatic deductive system.

Anticipating the course of further argument, I would like to mention that from the point of view of the metaepistemological programme of the semantic theory of knowledge, Ajdukiewicz’s radical conventionalism is a semantic-knowledge-theoretical position, i.e. it is a semantic theory of knowledge understood and implemented in accordance with that programme, although it was announced as a programme two years after the

publication of works presenting radical conventionalism. It is the implementation of this programme because—roughly speaking—the linguistic picture of the world about which the radical conventionalist speaks is built of sentences and as such is *equivalent* to the image of the world built of the meanings of these sentences. The meanings of these sentences are logically understood propositions. These, in turn, are the objectively conceived contents of acts of judging, i.e. the objective content of psychologically understood judgments. I emphasized the word “equivalent” because the word is key to the semantic theory of knowledge programme which proclaims the equivalence of reflection on logical concepts and propositions and reflection on expressions and sentences.

As in the case of comments made about the quoted statements of Jan Woleński, also in the case of the statements of Anna Jedynek, the same two matters require a broader treatment: the matter of the different approaches to language of Ajdukiewicz and Tarski, and the matter of the metaepistemological programme of the semantic theory of knowledge.

4. THE APPROACHES TO LANGUAGE OF AJDUKIEWICZ AND TARSKI

4.1. Ajdukiewicz’s approach to language was always a pragmatic approach, in which the intensional interpretation of language played an important role. Along with that interpretation, Ajdukiewicz mentioned the referential side of language, but did so in order to emphasize the importance of this, exactly, intensional interpretation.⁵ In the essay *Język i znaczenie* [Language and Meaning] (1960f), published in 1934 and presenting the syntactic and pragmatic foundations of the concept of radical conventionalism, he wrote:

Language is not uniquely characterized only by its store of words and rules of syntax, but also by the way in which words and expressions are assigned their meaning. [...] Therefore, the unambiguous characterization of a language includes giving the assignment of its sounds (or written characters, etc.) and their meaning. This assignment will be called the correct assignment of language meaning. It is not yet complete when the assignment is established between the words or expressions of the language and the ob-

⁵ Ajdukiewicz did not use the term “intensional interpretation of language” but talked about assigning expressions to their meanings.

jects they name. First, because: not all expressions name objects, but only those among them that have a nominal character, i.e. names; however, all the words and phrases of the language have meaning. Secondly, two expressions may name the same object and yet have different meanings: for example, “the highest peak in Europe” and “the highest peak in Switzerland” refer to the same object, but have different meanings. (Ajdukiewicz, 1960f, p. 149)

Ajdukiewicz writes in the same way in *Logika pragmatyczna* [Pragmatic Logic] published over thirty years later, in which we read that “each [...] language is characterized 1) by the range of its expressions and 2) by assigning them (not always unambiguously) specific meanings” (Ajdukiewicz, 1965b, p. 23).

Speaking of Ajdukiewicz’s semiotic views, it should be remembered that the basic semiotic concept in his approach to language was always the pragmatic concept of “understanding of expressions”. It is fundamental both in *Language and Meaning* written in the 1930s (Ajdukiewicz, 1960f) and in *Pragmatic Logic* from the 1960s (1965b). Based on the concept of “understanding of expressions”, Ajdukiewicz introduced in *Language and Meaning* the concept of “directive rule of meaning”, also called the “directive of acceptance of sentences” or “rule of sense”. This concept is crucial for the directival concept of language, which Ajdukiewicz announced and presented in the works *O znaczeniu wyrażeń* [On the Meaning of Expressions] (1960c) and *Language and Meaning*, and which he accepted until almost the end of his life,⁶ and on the concept of the “meaning directive” (strictly: on the concepts of “meaning directives”, because Ajdukiewicz distinguished three kinds of such directives) he based the definition of the linguistic meaning of expressions. So it is easy to see that the concept of “understanding of expressions” and the concept of “meaning of expressions” are closely related. It is no different in *Pragmatic Logic*. The first chapter of this volume, which deals with the meaning of expressions, begins with the author’s considerations on the understanding of expressions, and only later, based on these considerations, does Ajdukiewicz characterize the meaning of expressions. Just as in the 1930s, he solves issues of the understanding of expressions based on Edmund Husserl’s intentional theory of the meaning of expressions, laid out in the

⁶ For Ajdukiewicz’s abandonment of the directival theory of meaning, see (Ajdukiewicz, 1965g).

second volume of *Logical Investigations*. The fact that in *On the Meaning of Expressions* and *Language and Meaning*, Ajdukiewicz then translates this Husserlian comprehension of the understanding of expression into a syntactic-pragmatic concept, does not change the essence of the matter. Whenever he began his argument to illuminate or solve the problem of the meaning of expressions, he often followed the path of Husserl, his Göttingen teacher, the path of consideration on the characteristics of acts which confer meaning. For before Husserl fully described these acts, thus capturing the essence of the meaning of expressions, he first considered the fundamental answer to the question of what is understanding of expressions, understanding without intuition, i.e. without non-linguistic imaginative content, which may, but does not have to fulfil the understanding that is based on an intuition. Without realizing what understanding of expressions is, it is impossible to grasp what expression meaning is (*audrückliche Bedeutung*), and also what is meaning “in itself” (*Bedeutung “an sich”*), that is, non-expressional meaning, which is currently not associated with any expression of the language (Husserl, 2000, pp. 77–129). I would like to emphasize this last sentence.

Ajdukiewicz’s pragmatic and directival conception of language operates with such a subject (user) of a language that is always “inscribed” in a language, which—in other words—is always “in the power” of a language. This concept of language is closely related to the philosopher’s approach to the way of understanding the cognizing subject and—thus—to the basic epistemological opposition, i.e. to the opposition: the cognizing subject—the object of cognition. The cognizing subject in Ajdukiewicz’s logical-linguistic epistemology, and his epistemology was always such, is a special case of the subject of language referred to in the logical pragmatics he initiated and cultivated. In other words, in Ajdukiewicz’s epistemology, the concept of “cognizing subject” is subordinate to the concept of “language subject”. And this means that every cognitive act is at the same time a linguistic act, after all, a non-verbalizable act does not deserve the name “cognitive”, according to Ajdukiewicz. Verbalizability of the cognitive act is a necessary, but not sufficient, condition to be able to reasonably declare that it is cognitive. This condition is also a component of anti-irrationalism—a metaphilosophical position preached by Ajdukiewicz and shared by other philosophers of the Twardowski school. This position states that acceptable knowledge should be communicable and intersubjectively verifiable and that the degree of acceptance of the com-

municated propositions should be directly proportional to the level of justification.⁷

I stated above that the cognizing subject in Ajdukiewicz's epistemology is a special case of the subject that is always "in the power" of a language. This statement requires explanation, and in doing so, we must rely on Husserl's *Logical Investigations* and show his influence on Ajdukiewicz. I shall start with Ajdukiewicz's last work—*Pragmatic Logic*, which seems to be neutral philosophically, and then move on to his earlier, clearly philosophical statements.

The first paragraph of the first chapter of *Pragmatic Logic* begins with a description of Husserl's view of the understanding of expressions, although Husserl's name does not appear on this occasion. However, this is Husserl's description, because, explaining the act of understanding expressions, Ajdukiewicz writes about the intertwining of one perception-intention directed at a given inscription or sound of a language sign with the meaning-intention directed at the meaning of that sign, and through that meaning—at the possible object of reference of the sign, strictly: on this aspect or appearance of the object through which this object reference appears to a person who understands this expression. Here is what we read in *Pragmatic Logic*: "We often say that someone understood a given word when hearing the word intertwines within him one thought with some object different from that word" (Ajdukiewicz, 1965b, p. 19). After pointing to other ways of understanding the phrase "to understand an expression", Ajdukiewicz adds:

⁷ There are many statements by Ajdukiewicz in this regard, I would like to draw attention to two. The first, rarely cited, is a welcome speech that Ajdukiewicz gave at the International Congress of Scientific Philosophy at the Sorbonne in 1935 (Ajdukiewicz 1994). This speech is related to Ajdukiewicz's second statement—his article *Logistyczny antyirracjonalizm w Polsce* [Logistic Anti-Irrationalism in Poland] (1935). This article is a translation of the paper entitled *Der logistische antyirracjonalismus in Polen*, which Ajdukiewicz gave in Prague in 1934 during the Preliminary Conference to the International Congress of the Unity of Science, which took place in Paris, at the Sorbonne, on September 16–21, 1935. The Preliminary Conference took place in Prague on August 31 and September 1, 1934 and was convened by the Vienna Circle as a supplement to the VIII International Philosophical Congress. Shortly afterwards, on the days 2–7 of September The VIII International Philosophical Congress was held in Prague.

[leaving aside these other ways of understanding expressions—A.O.] we shall keep in mind in our further arguments its first meaning by which one understands an expression, when its being heard directs the thoughts of the hearing person to something different from that expression. In these cases, the process of understanding a phrase heard by someone relies on a certain thought of the individual hearing it, which in his mind intertwines with hearing that expression. Such a thought is also a process of understanding the expression by the one who pronounces it, because by speaking it, he also hears or perceives it differently. (Ibid, p. 19)

Finally, by exemplifying the act of understanding the expression with the example of the word “hexagon”, Ajdukiewicz writes that this word, although it might have been incomprehensible to someone at first, ceases to be an empty sound and becomes an expression when it becomes intelligible, and becomes such, when along with the perception of this word intertwines a thought different from that of the word—that other thought is the subject matter to which this word refers. When two people hear or read this word with understanding, their thoughts about the same object may be different in content. For example, the content of one person’s thoughts may refer to a polygon with 9 diagonals, and the content of the other person’s thoughts may refer to a polygon with internal angles summing to 720° .

In *Language and Meaning* (Ajdukiewicz, 1960f), preparing a syntactic-pragmatic ground for radical conventionalism, Ajdukiewicz explicitly refers to *Logical Investigations*, and, precisely, to *Investigation I* of the second volume entitled *Expression and Meaning* [*Ausdruck und Bedeutung*]. He does so while characterizing the articulate acts of judging and distinguishing them from the non-articulate acts of judging. Only linguistic articulation is taken into account in saying that “Scientific judgment-processes in mature form are always of the verbal sort” (Ajdukiewicz, 1960f, p. 147). It is about speaking quietly or loudly,

[I]n which usually there can be discerned a more or less fragmentary intuitive presentation of a word-image. This intuitive presentation is then mixed with certain others (without analysis of the distinguishable components) into the unity of the articulate judging. We consider it fallacious to characterize matters in such a way that in the cases above judging is linked to the sentence-representation simply on the basis of association. The representation enters fully into the judgment-process and, indeed, forms its essential part. This has been convincingly demonstrated by Husserl. (Ibid, p. 147)

As confirmation, Ajdukiewicz points to the said *Investigation I* entitled *Expression and Meaning*. Ajdukiewicz's critical remark in the quoted passage is noteworthy regarding linguistic associationism, which—according to him—weakly links cognitive acts with language, in contrast to Husserl's theory, in which these two acts—the act of judging and the linguistic act—are bound in one, synthetic whole.

Ajdukiewicz repeatedly criticized the associationist position on the meaning of expressions and, consequently, on the relationship between cognitive acts and linguistic acts. Each time, the criticism was based on the intentional theory of the language of Edmund Husserl laid out in *Logical Investigations*. This was the case with the lectures on logical semantics which he gave at the Jan Kazimierz University in Lviv in the autumn of 1930, when, after a critical analysis of associationism and after a thorough presentation of Husserl's understanding of expression and meaning, he stated that the error of associationism is that it binds thought too weakly with language (Ajdukiewicz, 2014, pp. 150–157). Ajdukiewicz presents the same position in his work *On the Meaning of Expressions*, in which—after criticism of associationism in the spirit of Husserl, and after the presentation of Husserl's concept of the meaning of expressions—he then further clarifies this concept with the help of syntactic-pragmatic concepts characteristic of his directival theory of language, which he presented for the first time in this paper (Ajdukiewicz, 1960c).⁸

⁸ The last paragraph of this work entitled *O tzw. intencji aktu znaczenia* [On the So-Called Intention of an Act of Meaning] deserves special attention. It talks explicitly about the explanatory reduction of the direction and matter of the act of meaning-intentions—which Husserl writes about in his *Logical Investigations* and which Ajdukiewicz considers in this work—to the syntactic and pragmatic concepts introduced by Ajdukiewicz in this paper. To the reader who uses the editions of *Język i poznanie* [Language and Knowledge], vol. 1 from 1960 and 1983, I would like to draw attention to the error that is not found in the original edition of this work or in the edition of vol. 1 from 2006. This error is that in the last paragraph, instead of the correct expression “direction of intention” is the expression “direction of intuition”. Another error that occurs in these editions (from 1960 and 1983) is in paragraph 8 and relates to a key concept of the work, “wywodzenia w sposób istotny” [significant derivation]. It is crucial because it plays a major role in the explanatory (syntactic-pragmatic) procedure which Ajdukiewicz presented there, regarding the intention of meaning. The original and the aforementioned 2006 edition are also free of this error. I analyse the issue of Ajdukiewicz's

Speaking about the weak connection between thought and language in associationism, Ajdukiewicz had in mind the thought on which the understanding of expressions is based, which is also the psychological meaning of the expression. This thought is—according to Husserl and Ajdukiewicz following him in this respect—an act of meaning-intention, which, in the case of verbal cognitive acts, is an act of comprehension or judging, i.e. it is a concept or judgement in the psychological sense. The objectively understood contents of these acts, also understood in Husserl's way, are according to Ajdukiewicz's philosophical and linguistic views, logically understood concepts and propositions, and these are expressive meanings (they are *ausdrückliche Bedeutungen*—in Husserl's language). Ajdukiewicz's last lecture, part of a series on logical semantics, in which the lecturer indicates his definition of the logically understood meaning of expressions, clarifies this matter. Here is what Ajdukiewicz said about the meaning of expressions understood in this way, at the same time ending with this statement the whole series of lectures, which I would like to emphasize clearly:

One of the best solutions [...] is what has been done by Husserl, who subjects these [closely related to linguistic expressions—A.O.] thoughts to an analysis in which he distinguishes their various properties, and in particular something that would commonly be called “content”. Husserl says that in every thought one can distinguish, among other things, two parts or sides, such as the quality of thought (Husserl says: the quality of the act of thought) and the matter of thought. The quality of thoughts is what distinguishes, e.g. performances from beliefs, beliefs from supposition, etc. What changes in a person who first hears a statement but does not yet understand it, and only then realises, etc. would be a good illustration of what Husserl calls the quality of the act. However, he does not give any closer definition in this regard. On the other hand, the matter of the act is that in thought which directs it to this or that object and to an object with such and such properties. These are undoubtedly very inaccurate definitions. It seems that nothing can be said more accurately on this topic. We would like to explain what is meant by matter. The component of matter is what in two thoughts makes one of them focus on these objects and the second on others. This term, however, does not exhaust the meaning of the word “matter”, because two thoughts directed at the same ob-

syntactic-pragmatic explication of Husserl on the meaning of expressions in (Olech, 2001).

jects may differ in matter, if in these thoughts the objects are seen from a different point of view as something different. Suppose that Mr. X's father is the only manager of bank S. If someone says "father of X" and someone else—"manager of bank S", then the thoughts accompanying these statements refer to the same object, to the same human individual. However, one of these thoughts captures this individual from one point of view—as Mr. X's father, and the other from a different point of view—as the manager of bank S. To the matter of a particular thought belongs that which makes this thought focus on this or that object as such and such. Husserl calls the quality of thought and matter the semantic nature of thought. The existence of meaning [of thoughts] is a feature of thought that distinguishes a certain class of thoughts, and therefore there can be a lot of thoughts about a certain semantic essence. All thoughts that arise in the minds of Poles hearing with understanding, e.g. the word "pies" (dog), will have the same quality and the same matter. Now, one could say that the meaning of a word with such and such a shape is the semantic essence of thoughts that must be intertwined with this word so that the word can be used as an expression in this or that language. (after: Olech, 2014a, pp. 171–172)⁹

⁹ Here are a few remarks regarding the aforementioned series of lectures by Ajdukiewicz from autumn 1930 devoted to logical semantics: (1) Kazimierz Ajdukiewicz gave eighteen lectures on logical semantics in the winter semester of the 1930/1931 academic year. These lectures were stenographed by the then student of philosophy and mathematics at the Jan Kazimierz University in Lviv, Kazimierz Szałajko. Szałajko passed them on in October 1985 to Prof. Jan Woleński on the occasion of the cyclical conference on the history of logic, which was then held in Krakow at the Institute of Philosophy of the Jagiellonian University. At that time, I was a doctoral student of Prof. Woleński preparing a doctoral dissertation on Ajdukiewicz's semiotic views and I used these lectures significantly in my dissertation, probably being the first person who had referred to them in a publication. (2) Most of Ajdukiewicz's lectures on logical semantics were published in the Archives section of the *Filozofia Nauki* [Philosophy of Science] quarterly. Lectures from IX to XVI appeared in *Filozofia Nauki* 1993, R. 1 (1). Lectures from III to VIII were published in the same quarterly designated as R. 22, 2014, No. 1 (85). (3) For reasons unknown to me, lectures XVII and XVIII were not published in *Filozofia Nauki*, therefore, with the knowledge of Prof. Woleński—the depositary of these lectures—I decided to publish lecture XVIII in the above-mentioned chapter of my authorship, because I consider this lecture one of the most important in the whole series. Hence the fact that I joined it to the chapter devoted to the stay of Ajdukiewicz and Ingarden in Göttingen, providing this lecture with relevant comments. (4) Lecture XVIII, which literally shows Aj-

The last sentence from the quoted lecture by Ajdukiewicz is a definition of the logically and linguistically at the same time understood meaning of expressions, i.e. the meaning that Husserl defines as the meaning of expression (*ausdrückliche Bedeutung*) and which he distinguishes from meaning “in itself” (*Bedeutung “an sich”*)

There are many such philosophical and linguistic statements following Husserl’s deliberations.¹⁰ They refer directly to two of Husserl’s *Investiga-*

dukiewicz’s attachment to Husserl’s intentional theory of language, has so far been published only in my chapter. Lecture XVII of Ajdukiewicz from this cycle has not yet been published (I have in my library a copy of this lecture prepared by hand, on the basis of the Szałaajko manuscript). Shorthand records of lectures I and II, also made by Szałaajko, disappeared and, in 1985, I no longer had them.

¹⁰ I agree with Ajdukiewicz when he says—describing Husserl’s approach in this matter—that the quality and matter of thought create what Husserl would describe as “the meaning-essence of thought”). However, in the view of Ajdukiewicz, presented above, the meaning-essence of thought is already something abstracted from the subjectively and numerically different acts of meaning-intentions entangled in a given word. If one wanted to be exact in this respect, that is, if one wanted to follow Husserl’s terminology faithfully, it would have to be said that the meaning-essence of thought, understood as the unity of quality and matter of the act, is still something on the subjective or mental level. In order to move from this level to the objective level, that is the logical, it is necessary to make an ideational abstraction, only as a result of which we will gain insight into the meaning in the logical sense, which—as a sense—is contained in this mental essence like an Aristotelian species form in an individual object. Therefore, we should say that the meaning of the expression (in a logical sense) is the *in specie* grasped meaning-essence of thought. Only then is the essence thus conceived of a higher order, a general being, while the previous meaning-essence of thought, not grasped *in specie*, is nothing more than *what is most important* in the multi-component act of meaning-intention involved in a given expression. Here is the appropriate quote from *Logical Investigations*, which justifies this: “Therefore, since [...] we must consider quality and matter as fully essential, and therefore the never-negligible components of the act, it will be appropriate that the unity of both of them, constituting only a part of the full act, should be described as the intentional essence of the act [*intentionale Wesen des Aktes*]. To preserve this term and the related approach, we also introduce another here. That is, when it comes to acts that perform or may perform the function of acts that give meaning to expressions [...] one should speak in more detail about the meaning-essence of the act [*bedeutungsmäßigen Wesen des Aktes—A.O.*]. Its ideational abstraction results in meaning in our ideal sense” (Husserl, 2000, p. 524). To conclude: what

tions contained in the second volume of *Logical Investigations*—to *Investigation I* entitled *Expression and Meaning*, and to *Investigation V* entitled *On Intentional Experiences and Their Contents*—or more or less explicitly refer to these investigations. These references or connections relate to Ajdukiewicz's semiotic-epistemological issues related to answering the questions: What is an expression? What are the meanings of expressions psychologically and logically understood? What is the content of concepts and judgements (after all, these contents are not understood referentially by Ajdukiewicz the epistemologist)? How is the act of judging entangled with the act of meaning-intention in a logically conceived sentence? What is the basic carrier of logical value? What is the philosophical and linguistic justification of the fundamental thesis of the semantic theory of knowledge, understood as a metaepistemological programme that states that reflection on concepts and propositions is equivalent to reflection on expressions and sentences? All these issues, which in this one article I can only point or refer to briefly, are addressed by Ajdukiewicz in the spirit of *Logical Investigations* or can be addressed in accordance with this spirit if they are to be coherent with the whole of Ajdukiewicz's philosophical and semiotic views.¹¹

4.2. Tarski's approach to language was a syntactic and semantic approach, and therefore completely different from Ajdukiewicz's approach. Moreover, Tarski was not an epistemologist, which Ajdukiewicz—using logical-language tools—was. It should be remembered that Ajdukiewicz, writing his semiotic-epistemological works, did not abstract from the traditionally understood theory of knowledge, which talks about cognitive acts, such as acts of comprehension or judging, and a cognitive subject. This was the case with works regarding radical conventionalism, as well as with those clearly implementing the metaepistemological programme of the semantic theory of knowledge, i.e. writing critically analysing the

Ajdukiewicz says in the lecture is strictly in the spirit of Husserl, and my point is only a terminological remark regarding the term “essence”, which in Ajdukiewicz has an objective-logical character, and in the relevant part of the *Logical Investigations* is subjective-psychological.

¹¹ It is significant, and in the context of what I have stated above understandable, that is, not surprising, that in the Husserl Archive there are copies of Ajdukiewicz's works dedicated to Husserl—this information was provided to me by Prof. Jan Woleński.

positions of metaphysical idealism. As an ontological antipsychologist, Ajdukiewicz distinguished cognitive acts from the objectively, i.e. logically, understood content of these acts, but this does not mean that as an epistemologist he removed from the scope of his considerations the problems of psychologically understood cognition, and thus the problems of the real cognitive subject. Moreover, he could not remove them, after all, he practised logical pragmatics, which in his semiotic approach to epistemology intersected with the scope of his epistemological considerations. Meanwhile, Tarski, approaching the issue of defining the truth understood in the classic way in his 1933 publication, not only addressed it solely on the syntactic and semantic plane, but also—in his conviction and intention—addressed it only for the formalized languages of the deductive sciences. Yes, he referred to philosophers who wrote about the problem of truth—he referred to the *Metaphysics* of Aristotle and *Elements* of Tadeusz Kotarbiński, when he wrote about the intuitions that guided him in his approach to the problem of truth and when he considered the possibility of constructing the correct definition of the phrase “true sentence” for everyday languages.¹² However, the conclusion of the discussion regarding the possibility of formulating such a definition of truth for these languages, which would also reflect the intuitions that these philosophers associate with the concept of “truth of the sentence” was negative.¹³ Therefore, in further considerations, Tarski limited himself only to formal languages,

¹² As for Aristotle, Tarski referred to the *Metaphysics*, to the part of book *Gamma* that deals with the defence of the principle of the excluded middle, in which we read that “to claim that Being does not exist, or that Non-Being exists is false; however, to say that Being exists and Non-Being does not exist, is true” (Aristotle, 1984, p. 99). As for Kotarbiński, Tarski referred to those fragments of his *Elements* that relate to the question of the veracity of the sentence and the question of the truth of the thought and in which—according to ontological reism and also according to his semantic reism—Kotarbiński writes that in the literal sense the predicates “true” and “false” only apply to sentences (Kotarbiński, 1986, pp. 110–111) and that if the words “truth” and “falsity” are to be proper and non-empty names, then “truth” should be understood as “true sentence” and “falsity” as “false sentence”.

¹³ Tarski wrote: “[...] the mere possibility of using the expression ‘true sentence’, consistently and in accordance with the principles of logic and the spirit of the common language, and thus the possibility of building any correct definition of this expression seems strongly questioned” (Tarski, 1995c, p. 31).

which he characterized “[...] as such (artificially constructed) languages in which the meaning of each expression is clearly determined by its form” (Tarski, 1995c, p. 31).

What deserves special attention in this quote, in the context of Ajdukiewicz’s different approach to language from Tarski’s, is Tarski’s statement that the meaning of each expression is clearly determined by its form. Since the form of expressions is solely the subject of syntactical considerations, therefore—according to Tarski—the meaning of formalized expressions of the languages of deductive sciences is definable only on the basis of syntax. However, Tarski did not give any definition of meaning, and he considered the very notion of “meaning” vague (see also Tarski, 1995a, p. 203). He did not identify, as Ajdukiewicz did, judgements and propositions with the meanings of sentences, not deal with propositions at all. Ajdukiewicz identified psychological judgements with psychological meanings, while logical judgements that is propositions with linguistic (logical) meanings. In the essay dating from 1944, the *Semantyczna koncepcja prawdy i podstawy semantyki* [The Semantic Conception of Truth and the Foundations of Semantics] (1995d), and therefore eleven years after the publication of *Pojęcia prawdy w językach nauk dedukcyjnych* [The Conception of Truth in the Languages of Deductive Sciences], Tarski wrote:

The predicate “true” is sometimes used to refer to psychological phenomena such as judgements or beliefs, sometimes to certain physical objects, linguistic expressions and specifically sentences, and sometimes to certain ideal entities called “propositions”. By “sentence” we understand here what usually meant in grammar by “declarative sentence”; as regards the term “proposition”, its meaning is notoriously a subject of lengthy disputations by various philosophers and logicians, and it seems never to have made quite clear and unambiguous. For several reasons it appears most convenient to apply the term “true” to sentences, and we shall follow this course. (Tarski, 1995d, p. 231)

Although Tarski limited himself to talking about sentences in this work, he did not exclude the possibility of later extending the concept of “truthfulness” to other types of objects, that is, as one can guess, to judgments and propositions. How would this extension take place?—unknown. It is known, however, that in this paper he also claimed what he firmly maintained in 1933, namely that:

The problem of defining truth has a clear meaning and can be solved strictly only for languages whose structure has been strictly defined. For other languages—that is, for all natural, “spoken” languages—the sense of this problem is more or less vague, and its solution can only be approximate. (Tarski, 1995d, p. 240; emphasis by Tarski—A.O.)

4.3. This cursory description of Tarski’s approach to language has already shown that from the point of view of this approach it is impossible to formulate the metaepistemological thesis of the semantic theory of knowledge proclaiming that reflection on logically understood concepts and propositions is equivalent to reflection on expressions and sentences whose meanings are those concepts and propositions. Further, that these concepts and propositions must be treated by the epistemologist as the meanings of expressions and sentences, if the contents of these concepts and propositions are to be determined. From Tarski’s point of view this is not possible, because he did not have—as already mentioned—any conception of the meaning of expressions and, consequently, no conception of the relationship between meanings and logical concepts and propositions; he merely stated that the meaning of the expression in a given language was clearly determined by the shape of the expression. After which he added that

[S]trictly speaking, this only applies to the so-called fixed symbols, [after all] variable symbols and technical signs (such as brackets, full-stops, etc.) do not have independent meaning, but they do have a significant impact on the meaning of the expressions that contain them. (Tarski, 1995c, p. 33)

So once again: the lack of a conception of the meaning of expressions, and moreover, refraining from taking a position on the subject of psychologically and logically understood cognition makes the semantic theory of knowledge understood as a project is not possible to formulate on the basis of Tarski’s approach to language, and since the semiotic legitimacy of this project—indicated by Ajdukiewicz, as will be discussed below—is also the legitimacy of the realization of the project, it is also not possible on the basis of Tarski’s logical theory of language to understand the semantic theory of knowledge as a legitimate realization of the project of the semantic theory of knowledge. Tarski’s influence on Ajdukiewicz’s semantic theory of knowledge is, therefore, limited to the latter’s using

some of the results that the former obtained on the basis of logical semantics.

Stating this, I am also aware that it is possible to develop a so-called semantic-formal theory of knowledge which abstracts from the traditional epistemological opposition: the real cognizing subject—the object of cognition (the world of the real cognizing subject) and replaces this opposition with an abstract cognitive subject constructed on the basis of a given formal language of the deductive sciences with the help of appropriate logical concepts and with the object of knowledge understood as a model(s) of a theory constructed on the basis of this language. Roman Suszko initiated this semantic and formal theory of knowledge, and Jan Woleński has developed it (Suszko, 1957a; 1957b; 1966; 1998a; 1998b; Woleński, 1984; 1993; 2005; 2009). The theory of knowledge understood in this way makes significant use of the achievements of logical semantics—including from model theory, to which Tarski contributed significantly. However, I do not take into account the semantic theory of knowledge so-understood, when I find Tarski’s limited influence on the semiotic or, as Ajdukiewicz called it, the semantic theory of knowledge. I am also aware of the fact that the semantic-formal theory of knowledge understood in this way was inspired by the syntactic-pragmatic theory of knowledge of Ajdukiewicz, which makes use of some results of logical semantics. I say “syntactic-pragmatic” because, in fact, that is what Ajdukiewicz’s semiotic epistemology was, although it is referred to as “semantic”, in the broad sense of the term. This does not mean, which I emphasize once again, that the author of the theory of knowledge understood in this way did not make use of the means of narrowly understood semantics, i.e. the semantics to which Tarski, who initiated it himself, significantly contributed to developing. But—as I emphasize—it was only as an aid.¹⁴

¹⁴ At this point, I would like to recall Roman Suszko’s opinion, which coincides with my own. Suszko wrote about the poor use of the achievements of modern logical semantics by Polish, but not only Polish, philosophy, and wrote about the former: “It is puzzling that in Polish philosophy, from which semantics arose and which for the past forty years has been very closely associated with formal logic, we do not actually find any serious applications of semantics to philosophical problems [...] Let us note that Prof. Ajdukiewicz, who most broadly associated philosophy with formal logic, avoided the use of semantic concepts, especially the concept of truth, in his pre-war work. His post-war work has a slightly different character in this respect. In the article [...] *Epistemologia i semiotyka* [Epistemol-

Let the conclusion to these considerations be the statement, which also in this case retains its value, of Izydora Dąmbska, who said that Ajdukiewicz was such an outstanding figure that he was rarely influenced by anyone.¹⁵

5. THE METAEPISTEMOLOGICAL PROJECT OF THE SEMANTIC THEORY OF KNOWLEDGE

5.1. Let me remind readers of the project, this time in Ajdukiewicz's words:

The theory of knowledge (epistemology) deals in some of its branches with knowledge as a psychological process, in others, with knowledge in the logical sense. The fact that knowledge in the logical sense consists of meanings relative to language implies that for any sentence about judgments or concepts (in the logical sense) there exists an equivalent sentence about sentences or terms whose meanings are those judgments and concepts. So, for example, sentences about the relation of consequence or about the relation of inconsistency, etc. between judgments are equivalent with sentences asserting suitable relations between the sentences whose meanings are those judgments. This circumstance is made use of in a certain recently developed approach to the theory of knowledge, viz. the semantic theory of knowledge in which epistemological problems are programmatically studied from the point of view of language as a system of expressions endowed with meaning. Its theses are formulated in such a way that they concern expressions, i.e. sentences and terms, but sentences and terms of a definite language which endows them with meaning. In this way the semantic theory of knowledge makes use consciously of the only method which enables one to make assertions about certain cognitions with determinate content. For it is impossible to name a given concept or judgment except by characterizing them as the meanings of certain terms or sentences. (Ajdukiewicz, 1960h, pp. 265–266)

ogy and semiotics], in which he demonstrates that the theses of idealism, on some interpretation of them, cannot be reasonably expressed, in the terms “true” and “signifying” which belong to semantics. However, a thorough review of the text shows that the author himself does not use these terms, but considers ways of using them by conducting a detailed analysis of the correctness of the use of semantics or the language of syntax. This analysis does not use semantic terms” (Suszko, 1957b, pp. 58–59).

¹⁵ From my conversations with Izydora Dąmbska: October 1982—March 1983.

It would be interesting to describe the “nominalist climate” in which Polish logicalizing philosophers and logicians worked, and which they co-created, in the early decades of the 20th century, because, to some extent, from this climate arises Ajdukiewicz’s epistemological idea—in practising the semiotic theory of knowledge—instead of concepts and propositions, to talk about expressions and sentences. I am aware that Ajdukiewicz was not a nominalist, as a logicalizing philosopher, he was rather a Platonist, which is reflected in his work on universals and definitions, as well as in the ideal understanding of science (knowledge), which I shall mention below (Ajdukiewicz, 1932; 1965c; 1965f). Without developing a new thread, I would like to remind the reader that this climate was characteristic of the Warsaw environment, not the Lviv one, and that Ajdukiewicz spent some time in this Warsaw environment, as an extraordinary professor of philosophy at the University of Warsaw in the years 1924–1928, where he became closer scientifically to Stanisław Leśniewski, a radical nominalist. However, I cannot resist the temptation to mention the nominalist atmosphere in which Warsaw philosophers and logicians lived, nor to recall the letter of Władysław Witwicki, which he sent from Warsaw to Kazimierz Twardowski, in Lviv, on January 11, 1920. Here is what Witwicki wrote:

I don’t know which tooth really hurts when Łukasiewicz and Lesniewski talk about “sentences” next to me, as though it were about the grammar of words, and about expressions, and not about things, objects, facts, claims, negations, and the objective world and cognizing subjects and their relationships, only about words, words and words again. These “sentences” drawn clean from all traces of beliefs, for me become combinations of murmurs [...]. I cannot begin to doubt the existence of qualities because Leśniewski makes mischief with the expression “property” and under the influence of this mischief Kotarbiński quite seriously claims that he does not believe in properties. (Jadcak, 1997, p. 32)¹⁶

¹⁶ The words of Łukasiewicz, written years later in his diary on June 11, 1949, are a kind of answer, counterpointing this fragment of the letter. He wrote: “Władysław Witwicki was comprehensively gifted: in high schools he was a teacher of science, also he was a psychologist, a philosopher, a translator of Plato, and finally he drew, painted and sculpted. Of one ability, however, he was completely deprived: namely the ability for mathematics and symbolic thinking. When he was to prepare a mathematics subject in Lviv when he was taking the teaching exam in science, he turned to me for help. As a topic, he received from Puzyna,

Twardowski's article *Symbolomania i pragmatofobia* [Symbolomania and Pragmatophobia], well-known among Polish analytical philosophers, probably also has its origin in this letter. This is an article that warns against placing symbols above things, which can lead to things being bent to symbols, "[...] it means that things are said to arise from symbolic assumptions and actions, no matter what things say about themselves, or even contrary to what things say about themselves" (Twardowski, 1965c, p. 362).

a professor of mathematics, a third- and fourth-degree equation. I wrote an essay on this subject for him, and in return he painted a portrait for me" (after: Łukasiewicz, 2009/2010, vol. 2/3, pp. 345–346). And one more fragment from those Memoirs, concerning Witwicki indirectly (after all, he was closest to Twardowski in his philosophical views), and Twardowski directly, and in particular the issues raised by the above quote from the fragment of Witwicki's letter to Twardowski: "Twardowski highly valued the work of the second priest [second alongside F. Brentano], living in the first half of the nineteenth century, Bernard Bolzano. Bolzano was a professor of religious studies at the University of Prague and was an outstanding mathematician and logician. His works in the field of logic have an incomparably higher scientific level than the philosophical talk of Kant or Hegel. If Twardowski understood the difference of the scientific method used by Bolzano from the random and often thoughtless talk of German philosophers, he would perhaps have created a new direction of scientific philosophy, to outweigh the views of the Vienna Circle. Meanwhile, Twardowski was under the spell of not so much Brentano's Aristotelian period, but his later philosophical works infected with psychologism. The apparatus of ideas and issues that Twardowski brought from Vienna to Lviv was extremely barren and poor. There was always talk about whether belief is a psychological phenomenon of a separate kind, or whether it is a combination of concepts, constant talk about ideas, performances, concepts, their content and object, and it was not known whether the analysis that was done on that belonged to psychology, to logic, or to grammar. The first volume of Husserl's *Logical Investigations* made a great impression in Lviv, especially on me. I had long disliked the psychology, practised by Twardowski, now I completely broke with him. However, volume two of Husserl's *Logical Investigations* disappointed me. It contained some vague philosophical talk again, which repelled me from all German philosophers. I was surprised that such a difference could exist between two volumes of the same work. I found out later that in the first volume, it was not Husserl who spoke to me, but someone far larger than him, whom Husserl used in his book, and that was Gottlob Frege" (ibid., pp. 357–358).

The declared nominalists among the outstanding figures of this group were Leśniewski, Kotarbiński and Tarski. At the same time, Tarski's nominalism, which he so strongly emphasized, was only declarative, since in his logical research he used sentences-types (signs-design) that are foreign to nominalism, and not the sentences-specimens (signs-event) with which, if he were an actual nominalist, he should have operated (Tarski, 1995c, p. 19, note 5; 1995d, p. 231, note 5). On the other hand, what Witwicki could have taken as nominalism in the case of Ajdukiewicz, though Ajdukiewicz's name was not mentioned in the letter, was his approaching philosophical issues—both epistemological and ontological-metaphysical—from the language side. Because instead of concepts and judgements or propositions, Ajdukiewicz talked about sentences and names, and instead of universals—about the number of semantic categories of names, that is—speaking Quine's language—about the ontological involvement of language. However—as it appears from the considerations so far—such an approach allowed Ajdukiewicz to use epistemological and ontological logical tools in his work. It did not mean, however, that judgements, propositions and concepts disappeared from the sphere of his epistemological considerations, since they were defined by him as the psychological and logical meanings of these expressions and since they were understood—in the case of their psychological understanding—as acts of meaning-intention intertwined with these expressions, and in the case of the logical understanding of concepts and judgements (that is, propositions), as *in specie* the understood essence of these acts. Ajdukiewicz's "nominalism" was similar in the case of his ontological considerations—also in this case he approached the issue from the language side, asking whether the current Polish language is involved ontologically, in the spirit of conceptual realism or nominalism? He concluded his analysis that on the basis of the Polish language it is possible, without falling into contradiction, to state the existence of universals. Many years later, analysing nominal and real definitions, he came to the conclusion that, being logically unable to abandon real definitions in definition theory, the existence of universals should be recognized, after all they are the subject of these definitions (Ajdukiewicz, 1932; 1960c; 1965e; 1965f).

5.2. In Ajdukiewicz's words, quoted in section 5.1., about what the semantic (semiotic) theory of knowledge is, the key point is that the semantic theory of knowledge—focusing in its statements on expressions of the language that equips them with specific meanings—consciously uses

the only method that allows it to speak about certain content-specific knowledge. Ajdukiewicz goes on to say that one cannot name a signified concept or proposition in any other way than by describing it as the meaning of certain terms or sentences. Therefore, it becomes crucial to demonstrate that the concepts and propositions, defined in terms of their content, are the meanings of expressions. So—different again—it becomes crucial to demonstrate that

if a concept in the logical sense and just as understood judgement, that is a proposition, did not constitute the meaning of any expression, then nothing could be said about them as to their content [and that] anything that concerned such concepts and propositions would be inexpressible, [and that] thus, it could not belong to any science, as long as science is understood as something that is socially (inter-individually) available. (Ajdukiewicz, 1936, p. 338)

The justification of this thesis, which I shall only briefly discuss, deserves special attention, because it is the only justification—known to me—in all philosophical and analytical literature, which so convincingly demonstrates that cognitive issues should be approached from the side of language.¹⁷ This justification is based on distinguishing what an expression means from what it refers to, i.e. speaking in Frege's language—on the distinction between *Sinn* and *Bedeutung* or speaking in Husserl's language—on the distinction between *Bedeutung* and the *gegenständlicher Beziehung* (Husserl, 1928, pp. 49–50). Pointing out these distinctions, however, we must remember that in Frege's language the expression *Bedeutung* means the same as the expression *gegenständlicher Beziehung* in Husserl, while the expression *Sinn* in Frege has the meaning of the expression *Bedeutung* in Husserl. It should also be borne in mind that Ajdukiewicz was close to Husserl's terminology and—as has already been mentioned—that he was close to the whole of Husserl's philosophy of language contained in the second volume of *Logische Untersuchungen*.

¹⁷ A detailed analysis of this thesis, justifying Ajdukiewicz's metaepistemological project, is presented in the monograph *Semantyczna teoria poznania* [The Semantic Theory of Knowledge], in chapter. V entitled *Metaepistemologiczny projekt semantycznej teorii poznania* [The Metaepistemological Project of the Semantic Theory of Knowledge] (Olech, 2014b), as well as in the chapter entitled *On Ajdukiewicz's Project of the Semantic Theory of Knowledge* (Olech, 2018).

This philosophy underlies the justification of Ajdukiewicz's metaepistemological thesis contained in the quote in question, although it is not invoked during Ajdukiewicz's semiotic legitimization of this thesis.

Here's how this legitimization works:

(1) Language is a resource of intensionally interpreted expressions—which should be clearly stated, but we tacitly assume that some expressions also have an object reference.

(2) Thus, for example, the expression “triangle”, which has its own meaning and its object reference, refers to a triangle, and the expression “trilateral” to a trilateral, but since the trilateral is the same as the triangle, these expressions have the same object reference, i.e. they are equivalent. Yet, despite their equivalence, they are not synonymous, because understanding the first of them we direct our attention to the triangular figure, and understanding the second—to the trilateral figure.

(3) The acts of understanding these expressions are not, respectively, the concepts of the triangle and the trilateral, but the concepts of the “triangle” and the “trilateral”. Because the concept of a “triangle” understood psychologically is a concept that is an act of understanding the expression “triangle”—just as the concept of “trilateral” is an act of understanding the expression “trilateral”. They are, therefore, different acts as to their content or—in different terminology—as to their matter. Moving from the psychological plane to the logical plane, we will say that the concept of a “triangle” in a logical sense is a concept that is *in specie* the comprehended content of the act of understanding the expression “triangle”, while the concept of “trilateral”, also logically, is a concept that is *in specie* the comprehended content of the act of understanding the expression “trilateral”.

The acts of understanding the terms “triangle” and “trilateral” are the psychological meanings of these expressions, while the *in specie* content of these acts are the logical meanings of these expressions. Both the psychologically and logically understood concepts of “triangle” and “trilateral” are not identical in terms of content, but they are identical as to their reference, i.e. the meanings of the terms “triangle” and “trilateral” are not the same meanings, since their (material) content is different. In short: these expressions are not synonymous, although they are range-equivalent.

(4) However, when we say the concept triangle or the concept trilateral, i.e. when we use the names triangle and trilateral in ordinary rather than material supposition—as was the case previously, the graphic expression of which was quotation marks—then we mean any concept which

refers to a triangle, and therefore also refers to a trilateral; after all a triangle is the same as a trilateral. This concept is both the concept which is the meaning of the name “triangle” or the name “trilateral”, as well as the name “flat figure with the sum of internal angles equal to 180°” etc. In other words: if someone named the concept triangle, we could reasonably ask exactly what content of this concept do you mean when you talk about this concept, after all, your utterance is indefinite as to content. Do you mean the content in which triangularity is referred to, or the content in which trilateralness is referred to, or maybe the content referring to the flat figure with a sum of internal angles equal to 180°? etc.—after all, these are different contents, each of which is the meaning of the appropriate name: “triangle”, “trilateral”, “flat figure with a sum of internal angles equal to 180°” etc., and all of this content is contained in general and linguistic content names: the concept of triangle which you just used.

The point of justifying the metaepistemological design of the semiotic (semantic) theory of knowledge is to distinguish between simple and material supposition. For when we say: the concept of “triangle”, we speak briefly, because by developing this abbreviation we would say: the concept that is the meaning of the phrase “triangle”. In saying this, we mean only the concept referring to the triangle—the geometric figure. The content (matter) of the concept understood in this way, which is also the meaning of the expression “triangle”, is triangularity. In this case, one can speak of the content (matter) as inseparable from the act of comprehension, i.e. the act of understanding the word “triangle”. One can also talk about objective (logical) content (matter) abstracted from the subjective content (matter) experienced by a given subject who understands the word “triangle”. Husserl spoke of such objective content as being *in specie* content. This subjective or objective content is a triangle, as a geometrical figure, captured in its triangularity. These contents are views of a triangle—a subjective or objective view. Yet these views of the triangle can be many and different; different not only subjectively or numerically, which is the case with subjective content, but also different in their objective content.

However, when we say: the concept of a triangle, not a “triangle”, then we do not mean only the concept standing in the relation of designation of the triangle, but any concept related to the triangle. That concept is the concept of the meaning of the term “triangle”, but also the concept of the meaning of the term “trilateral”, etc. Therefore, it is not the concept

of the triangle, in contrast to the concept of the “triangle”, defined in its content. It will become such when we extract the content from the rich content and bind it to the appropriate expression—the expression “triangle” or the expression “trilateral”, etc., i.e. when that content becomes the meaning of the expression. About this rich content of the concept of a triangle, we can say that it is a class of individual concepts, each of which is the current or potential meaning of the corresponding expression. And each of these expressions refers to a triangle—a geometric figure.

6. FINAL CONSIDERATIONS

Speaking of the matters raised above, one must answer three fundamental questions:

- (1) what is an expression?
- (2) what is the content of the concepts referred to above? and
- (3) what was the actual motive of the metaepistemological project of the semantic theory of knowledge?

(1) The answer to the first question arises itself; after all, the previous considerations already contain it, though not directly. The linguistic expression is—ontologically speaking—a three-tiered creation: physical, mental and logical. By “physical” I mean a layer of inscriptions or sounds, that is, a physical sign that is given to the language user in the act of sensual perception, intentionally directed at that sign. By “mental” I mean the act of meaning-intention intertwined with this sign or—more precisely—intertwined with the act of sensory perception, the object of which is this sign. By “logical” I mean *in specie* the essence of an act of meaning-intention, which is the same in the numerically or subjectively different acts of the user or users of the language.

Husserl’s conception of expression is, therefore, a subjectivist-objectivist conception, which Ajdukiewicz, in his approving presentation, supplemented with some interesting modification corresponding to his fractional notation of syntactic categories, which he presented for the first time in his lectures in 1930.¹⁸ Ajdukiewicz’s key statement regarding the

¹⁸ In *Lecture VIII*, of October 28, 1930, Ajdukiewicz presented this interesting addition: “It seems that the point to which Husserl did not pay attention in the

ontological status of the expression—the statement contained in the footnote to the fragment of his lecture cited below—is the sentence that the act of meaning-intention, entwined with the act of sensual perception of an expressive sign, is the act constituting the expression as an expression. Due to the importance of this statement, it should be recalled once more and placed in the main text—and it reads as follows: “Thought” entwined “in some way with an expression, the thought which makes of that expression an expression”.¹⁹

Just as there is no expression in general, expression in abstraction from language (after all, being an expression is always being “in the field” of a language), so there is also no expression in abstraction from the subject of the language, i.e. in abstraction from some user. This is one of Ajdukiewicz’s basic, conjunctively complex theses. I think that Husserl would also subscribe to the first part of this conjunction.²⁰

The essence of an expression, its sense, that is its meaning is the *in specie* understood essence of the act of meaning-intention, which—described by Husserl as “expression meaning” (*ausdrückliche Bedeutung*)—

analysis itself, is that the expression, thanks to the thoughts that animate it [the implicit intentions of it—A.O.], has some syntactic form, whereas the symbols on the map have no syntactic form. A thought ‘entwined’ in some way with an expression, the thought that makes an expression out of this expression, not only has an intention that is directed to an object via the presentation content, but also has ‘side protrusions’ with which that thought can ‘hook’ on to some other thought, as long as this other thought also has such ‘side protrusions’ whose shapes will match. We want to point out that if an inscription is used as an expression, it is somehow associated very strictly with a certain thought, which still has the characteristic property that makes it able to connect with other thoughts entirely expressed through sentences” (Ajdukiewicz, 2014, pp. 157–158).

¹⁹ See. ed. 18.

²⁰ The fact that being an expression is always being “in the field” of a language (including “in the field” of its lexical resources)—this is the thesis *expressis verbis* voiced by Ajdukiewicz. He put forward this thesis in *Lecture III* and *Lecture IV*—see (Ajdukiewicz, 2014, pp. 144–149). This approach to linguistic expressions is referred to as “inarwacyjny” (arval)—from the Latin words: *in arvum*, meaning “in the field”. Husserl’s approach to language is one that relativizes being an expression to the subject of the language, after all, it is the source of the acts of intentions of meaning that are the ones that constitute expressions as expressions. I think that Husserl would also subscribe to the “inarwacyjny” approach to language expressions.

is the meaning “in itself” (*Bedeutung “an sich”*), held in the act of meaning-intention. At the moment of grasping this meaning by the act of meaning-intention (the act intertwined with the act of sensual perception of an expressive sign) that meaning ceases to be a meaning “in itself” and becomes an expression meaning. This transition, through an act of meaning-intention, from *an sich* to *ausdrücklich* is the moment constituting the expression as an expression. In other words: the expression sign, recognized initially and only in the act of sensual perception, becomes the expression *tout court* due to the intention of the meaning. And let’s add: the extra-linguistic and extra-subjective ideal meaning “in itself” comes, that is, “is incarnated” in the act, temporal by nature, of the intention of meaning of the empirical subject as a species essence of that sign. So—roughly speaking—Husserl’s concept of expression from the period of *Logical Investigations* is presented and this concept was always recognized by Ajdukiewicz (I omit his additions). One last sentence regarding this point: to be a language expression is the same as to be used—as a physical sign—by a language user as a language expression. This sentence was spoken by Ajdukiewicz in *Lecture V* of the aforementioned series of lectures and developed in subsequent lectures, and it summarizes that the essence of the expression is the intention of meaning, and the meaning of the expression is *in specie* grasped the essence of each of the subjectively and numerically different acts of meaning-intention related to a given expression.²¹

(2) The answer to the second question is closely related to the issues of concepts and propositions defined as to content, and this is the heart of the metaepistemological project of the semantic theory of knowledge. We remember that the conclusion of Ajdukiewicz’s considerations contained in this project is the fundamental statement that if the concepts and judgements or propositions about which traditional theory of knowledge treats are to be defined as to their content, they should be treated as the meanings of names and sentences: psychologically understood concepts and judgements should be treated as the psychological meanings of these expressions, and logically understood concepts and propositions as their logical (linguistic) meanings. This is equivalent to the statement that if the theoretician of knowledge intends to speak about knowledge specified

²¹ This was a lecture of October 9, 1930—see (Ajdukiewicz, 2014, p. 149). See also (Husserl, 2000, pp. 119–124).

in terms of its content, he should approach knowledge from the side of language, which in turn is equivalent to the statement that reflection on logical concepts and propositions is equivalent to reflection on names and sentences whose meanings are these concepts and propositions.

The content in question in this case is the intentional content, the content of the act of meaning-intention, i.e. the content of this act that gives the expression sense, that is, meaning. This content is something different from the content of the act that fulfils the sense, that is, from the act that gives it its intuitive fullness. The act that gives the expression a meaning is a non-intuitive act, but is an indispensable act for the expression to constitute itself as an expression. Meanwhile, the act that fulfils the sense is an intuitive act and it is by no means indispensable. The content of the act giving the expression meaning, i.e. intentional content, with which we are concerned in this case, is empty; empty in the sense that it is “open” to possible intuitive fulfilment of its content. The emptiness of intentional content does not, however, mean the absence of any content; after all, in that case we are dealing with non-intuitive content—the empty content of intentional content only means the absence of intuitive content.

In any case in which we are dealing with the understanding of any expression, understanding without intuition, one with “life” in this sense—as Husserl wrote—then we are dealing only with acts that give meaning, with intentional content or with content as an intended sense (Husserl, 2000, p. 83). Philosophical tradition has appropriate terms for this—it is, for example, *intellectio*, as opposed to *imaginatio*. The first of these comes into play when one needs to name the act of understanding without sensibility (intuition) of the word “thousandagon”, the second—when one needs to name the understanding fulfilled by sensible (intuitive) content. We can, understanding the word “triangle”, imagine the designation of the name, that is, introduce it to ourselves sensibly (intuitively). Philosophical tradition has the term *imaginatio* to denote this sensible act. However, the understanding of the word “triangle” is not based on the person who understands the word’s sensible presentation to himself of a triangle, but on the act of meaning-intention which has that empty intentional content. This empty intentional content can be, and in fact sometimes is, fulfilled by the sensible (intuitive) content of an intuitive presentation of a triangle to oneself, but it does not have to be so fulfilled; since it is not essential for understanding the word “triangle”, i.e. for using it as a linguistic expression. Meanwhile, in the case of the word “thousandagon”—or

another word, such as the abstract name “time”—the act of understanding this word is based solely on the content empty act of meaning-intention (Husserl, 2000).²² The issue of the emptiness of the content of the act of meaning-intention, also referred to as the “intended sense” or, for its specific character, the “empty x” (Husserl, 1967, pp. 454–455), I consider so important for these considerations that I would like to refer on this to Ingarden—an academic colleague of Ajdukiewicz from the time of their joint studies in Göttingen, including their joint participation in the Husserl and Reinach seminars. Here is what Ingarden wrote, referring also in the footnotes to Husserl’s *Logical Investigations*:

The content of the act must be strictly distinguished from all experienced, phenomenal-sensible content, the special case of which is sensory-impression content. The content of the act is [...] completely non-intuitive, in a sense, empty. The subject does not experience it, nor is it given to him in any way. The subject fulfils it or thinks of it, in a particular case of thought. This, of course, happens only when it occurs in its original form, i.e. when it is a component of the act just performed by the subject. (Ingarden, 1987, p. 182)²³

And Ingarden continues:

[...] the subject of consciousness fulfils the content of the act by simply living in a given act, reliving this act. In doing so, unloading in a defined way his activity in the act, he points the content of the act into a certain object with specific (precisely that content) properties, aims it in a way, and thus defines and comprehends it, being unable to achieve it with that content or to force it into self-presence by aiming solely. The content of the opinion-act [*Meinung*] directed at some object is precisely “empty”. One can “fulfil” it—as Husserl first showed—due to the fact that the subject of consciousness simultaneously experiences a certain intuitive content, foreign to himself, and that he will capture it in a special way. If the intuitive content is sensory, not imaginary, then the entity fulfilling the act achieves presenta-

²² The issues discussed at this point of consideration are the subject of Husserl’s considerations in *Logical Investigations*, in *Investigation I* (especially in paragraphs 9, 14, 15, 17, 18, 19, 30) and in *Investigation V* (especially in paragraphs 16, 17, 20, 21).

²³ Ingarden refers in the quoted passage to: Husserl (1928, vol. 2, first essay, § 34).

tion, the self-presence of the object fully defined by its qualities. (Ingarden, 1987, p. 183)²⁴

Summing up the considerations contained in this point, I would like to remind the reader that they were associated with the issues of concepts and propositions defined as to content, important for the metaepistemological project of the semantic theory of knowledge. The content in question in this case is not extensionally understood content, that is a set of common properties of the object references of these concepts and propositions or their linguistic expressions, but is interpreted intensionally as the content of acts that give meaning to these words or as the content of those acts *in specie*. In the first case, we deal with the content of psychologically understood meanings, and thus also concepts and judgments understood in this way, while in the second case, with the content of logically understood meanings, and thus also with logically understood concepts and propositions.

I would like to note that in Ajdukiewicz's works there are no such fragments that would clearly and exhaustively present the issues of the content of concepts and propositions, including the issue of being specific or indefinite as to content. Ajdukiewicz repeatedly refers to Husserl's *Logical Investigations* in his works, but he sometimes does it in such a way that he directs the reader to them, if he is interested in more detailed analysis or justification of the conclusions reached. This is the case in his *On the Meaning of Expressions* (1960c) and *Language and Meaning* (1960f). From reading the first of these papers, which is developed by the second one, the attentive reader sees that the contents of concepts or propositions, which are the meanings of the appropriate expressions, should not be understood extensionally, i.e. in a connotative manner, but intensionally—strictly: in a Husserlian way, that is, as intended senses. Because to such an understanding of content the attentive reader is directed by the considerations contained in this article, which mentions Investigation I *Ausdruck und Bedeutung* from the second volume of Husserl's *Logische Untersuchungen* (see Ajdukiewicz, 1960c, pp. 118 and 124).²⁵

²⁴ The footnote, which appears in the cited passage, refers to: Husserl (1928, vol. 2, essays V and VI).

²⁵ In this case I use German-language titles, because they appear in this work by Ajdukiewicz and in *Language and Meaning*.

(3) The actual source of the semantic theory of knowledge—understood as a metaepistemological programme, and thus also as its implementations—was Husserl’s intentional expression theory laid out in the second volume of *Logical Investigations*. This was because this theory closely links thinking with language, allowing, through this connection, the legitimate identification of psychological concepts and judgements with the psychologically understood meanings of expressions, and logical concepts and propositions with logically (linguistically) understood meanings of expressions. Consequently, it allows us to legitimately proclaim the key thesis of the semantic theory of knowledge, that reflection on concepts and propositions is equivalent to reflection on expressions whose meanings are these concepts and propositions. No other language theory associates language with thinking so closely—a linguistic act with a cognitive act—as does Husserl’s theory. Yes, not all of the cognitive activity of the cogniting subject is contained in his linguistic activity—and Ajdukiewicz agreed with this statement, but emphasized at the same time that only verbal cognitive acts deserve the honourable name “cognition”, if what they say is also intersubjectively verifiable (Ajdukiewicz, 1960f, pp. 146–147; Ajdukiewicz, 1965g, p. 389).

He who thinks clearly, expresses himself clearly—this sentence is usually seen as the motto of the philosophical school of Kazimierz Twardowski. In the original, this sentence reads as follows: “[...] the author who is not able to express his thoughts clearly, cannot think clearly, [...] so his thoughts are not worth making an effort to guess at” (Twardowski, 1965b, p. 348). The premise for accepting this sentence is the statement that there is a close relationship between thought and language,

[...] the relationship is closer the more abstract the thought the speech expresses. [...] Human thought [...] is not [...] just an external expression of thought, but is also its tool, enabling us to think in an abstract way; thinking, we think in words, so in speech. (Twardowski, 1965b, p. 347)

The statement proclaiming the close relationship between thought and language is justified in Twardowski’s works. However, it is doubtful because it is based on linguistic associationism. Ajdukiewicz rejected linguistic associationism as an argument in favour of a close connection between

language and thinking, and as a critical tool in this respect he used the intentional language theory of Edmund Husserl from the second volume of *Logical Investigations*.²⁶ For Ajdukiewicz, the argument for a close connection between language and thinking was always Husserl's theory. In the 1930s, it also became the basis for the metaepistemological project of the semantic theory of knowledge presented at the Third Polish Philosophical Congress in Krakow, which, at the same time, legitimized the implementation of the project presented at this Congress, i.e. the semiotic-logical explication of Heinrich Rickert's transcendental idealism and the rejection of that explicated claim.

7. CONCLUSION

The purpose of this article was to show the importance of Husserl's intentional theory of language for the semantic or—more precisely—the semiotic theory of knowledge of Ajdukiewicz. Since Husserl's theory had a significant impact on Ajdukiewicz's semiotic views, it could not have failed to have a significant impact on his semiotic-epistemological views. The semantic aspect of Tarski's work—the metalogical principle of the excluded middle as a consequence of the semantic definition of truth—provided Ajdukiewicz with legitimacy for the transition from reflections on the linguistic picture of the world, i.e. from reflections on the world of linguistic intensions, to reflections on the world, i.e. the world of linguistic extensions. That was the case with the criticism of Rickert's transcendentalism. However, in the case of Berkeley's idealism, an analogous factor legitimizing such a transition was Leświski's distinction between language

²⁶ The criticism of language associationism based on the Husserl's intentional theory of language was carried out by Ajdukiewicz in the aforementioned *Lectures on Logical Semantics* (2014) and in the already mentioned work *On the Meaning of Expressions* (1960c). Twardowski justified the close relationship between language and thinking in the paper *Wyobrażenia i pojęcia* [Images and Concepts] (1965d) and in the paper entitled *O istocie pojęć* [On the Nature of Concepts] (Twardowski, 1965a). The first paper was originally published in Lviv in 1898. The second is, in fact, a repetition of some of the analyses of concepts that are included in the first. The paper *On the Nature of Concepts* was originally published in Lviv in 1924 as a pamphlet. I criticise Twardowski's arguments based on associationism in favour of the thesis stating the close links between thinking and language in the article (Olech, 1992).

and metalanguage, and, as a consequence of this distinction, the distinction between syntactic and semantic metalanguage, which Tarski made. It should be remembered, however, that although these semantic factors came into play in the implementation of the metaepistemological project of the semantic theory of knowledge, they did not have any impact on the project itself, which was carried out without the concepts of contemporary semantics.

Husserl's influence on Ajdukiewicz's semiotic views, including the metaepistemological project of the semantic theory of knowledge, concerns the concept of "knowledge defined as to content", i.e. "concepts defined as to content" and "propositions defined as to content", which is important for this project. The content in question in this case is Husserl's content understood as the content of the act of meaning-intention (content understood psychologically) and *in specie* the understood content of this act (content understood logically). Attention to this aspect of the semantic theory of knowledge was one of the main subjects of this essay.

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