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THE HISTORICAL SYNTAX OF PHILOSOPHICAL LOGIC

This article analyzes the historical development of the philosophical logic syntax from the standpoint of the unity of historical and logical methods. According to this perspective, there are three types of logical syntax: the elementary subject-predicate, the modified definitive-specificative, and the standard propositional-functional. These types are generalized in the grammatical and mathematical styles of logical syntax. The main attention is paid to two scientific revolutions in elementary subject-predicate syntax, which led to the emergence of modified definitive-specific and standard propositional-functional syntaxes and created the syntactic conditions for the development of contemporary philosophical logic. The specifics of contemporary philosophical logic and the methodological possibilities of its application to philosophical discourse are studied.

The article aims to reevaluate the undeservedly forgotten systems of philosophical logic of the continental tradition, created by such prominent representatives as Aristotle, G.W.F. Hegel, and E. Husserl, and to actualize these logics in the context of contemporary philosophical culture. The potential of the above-mentioned logics is not fully involved in the philosophical discourse of modernity, primarily because they primarily used an imperfect elementary subject-predicate syntax and modified definitive-specificative syntax as its slightly improved version. Both syntaxes have one thing in common: the grammatical style of sentence structure. Nevertheless, they also have one common flaw – a high dependence on grammar formalism. As a result, the interaction between these syntaxes and Frege's standard propositional-functional syntax is impossible, because the latter is based on mathematical formalism, which operates on the philosophical logic of the analytic tradition. The article substantiates the way to solve this problem by constructing a modified subject-predicate syntax of contemporary philosophical logic. This syntax provides information interaction between Aristotle's elementary subject-predicate syntax, and Frege's standard propositional-functional syntax based on Hegel's modified definitive-specificative syntax.

The proposed solution to this problem can create new opportunities for complementarity and mutual enrichment between the philosophical logic of continental and analytical traditions. The theoretical basis for the construction and study of contemporary philosophical logic is a functional analysis of contemporary symbolic logic, which improves the grammatical analysis of traditional formal logic. Functional-grammatical analysis is a way to rehabilitate the philosophical logic of the continental tradition. The novelty of this paper lies in the substantiation of the modified subject-predicate syntax of contemporary philosophical logic. It makes it possible to establish a dialogue between continental and analytical traditions, which is designed to promote the further development of philosophy.

Keywords: philosophical logic, logical syntax, modified subject-predicate syntax, definitive specification, scientific revolutions.

Communicative approach to the History of Philosophy

The history of philosophy is a complex discipline. It traces several main areas, including the history of philosophical concepts, the history of philosophical theories, the history of philosophical systems, the history of philosophical personalities, etc. From the point of view of the philosophy of the humanities, the history of philosophy is primarily the history of philosophical theories. The latter describes and explains the internal logical development of philosophical theories. Since philosophy itself is characterized by internal pluralism of concepts, theories, and systems, one of the most adequate approaches to constructing a theory of its historical-philosophical process can be considered a communicative approach that sufficiently takes

into account the interaction of internal and external aspects. The latter is understood as the logical and cultural-historical contexts of the development of philosophical theories.

From this perspective, the history of philosophical theory can be understood as historical and philosophical communication – the informational interaction between modern philosophical theories and concepts and the philosophical heritage of the past. This topic is one of the most important for the modern methodology of historical-philosophical reflection, and it is widely represented in methodological concepts such as M. Bakhtin's dialogic[1], V. Bibler's logic of the beginning of logic[2], W. Wrzosek's methodology of cultural attribution and translation[3], R. Koselleck's history of concepts[4], etc. Taking into account the work of the above mentioned researchers, the article substantiates a new understanding of the methodology of historical-philosophical analysis, based on the principle of unity of the history of philosophy and philosophical logic as two communicative systems. In this case, the history of philosophy is interpreted as a communicative interaction between studied and investigating philosophical cultures and philosophical logic as a communicative interaction between the philosophical logic of the continental tradition (Aristotle, I. Kant, G. Hegel, and E. Husserl) and philosophical logic of the analytic tradition based on G. Frege's logical principles. In such a unity of historical-philosophical and philosophical-logical communicative systems, logical-methodological communication serves as a prerequisite and basis for historical-philosophical communication. However, the communicative potential of traditional philosophical logic has not yet been fully revealed. This circumstance significantly complicates effective and heuristically fruitful historical-philosophical communication. The following chapters outline some new ways of solving this complex and important problem.

In modern philosophy, philosophical logic is understood as the use of methods of symbolic logic for the analysis of philosophical concepts and problems[5]. For example, according to B. Russell, philosophical logic is the program of finding logical forms. The form, according to the British philosopher, is not another constituent (of propositions), but the way the constituents are put together[6]. The theory of logical forms in the context of philosophical logic is also developed by Mark Sainsbury, who distinguished between linguistic and philosophical understandings of logical form[7]. Moreover, according to A. Schumann, philosophical logic "embodies the general direction of logical research, firstly focused on clarifying the semantic basis of the formal logic theories and, secondly, on the use of these theories to explicate worldview concepts and analyze some philosophical topics"[8]. Such an interpretation of the essence of philosophical logic can be conditionally called traditional philosophical logic because it dominates in modern philosophical discourse. However, it should be noted that the traditional understanding of philosophical logic focuses primarily on the philosophical tradition of analytical philosophy. Related to this is the dogmatic position in philosophical logic, according to which there can be only one of three historical types of logical syntax: Aristotle's elementary subject-predicate syntax, Hegel's modified definitive-specific syntax, or Frege's standard propositional-functional syntax. In this approach, only one of three logical systems has privileged access to the truth and can adequately express it[9]. In the history of philosophy, Aristotle's elementary subject-predicate syntax was monopolized by Thomistic philosophy; Hegel's inverted definitive-specific syntax in his materialist version was adopted by Marxist philosophy; and G. Frege's standard propositional-functional syntax became an instrument of analytic philosophy.

In modern discourse, Aristotle's philosophical logic is called metaphysical logic, Kant's philosophical logic is called transcendental logic[10], Hegel's philosophical logic is called dialectical logic, and Husserl's

[1] Бахтин, М. М. (1979). *Эстетика словесного творчества*. Москва: Искусство.

[2] Библер, В. С. (1990). *От наукоучения – к логике культуры: Два философских введения в двадцать первый век*. Москва: Политиздат.

[3] Wrzosek, W. (1995). *Historia – kultura – metafora. Powstanie nieklasycznej historiografii*. Wrocław: Fundacja na rzecz Nauki Polskiej.

[4] Koselleck, R. (2002). *The Practice of Conceptual History Timing History, Spacing Concepts*. Palo Alto, Calirofnia: Standford University Press.

[5] Карпенко, А. С. (2003). Современные исследования в философской логике. *Вопросы философии*, *9*, 54-75.

[6] Russell, B. (1914). *Our Knowledge of the External World: As a Field for Scientific Method in Philosophy*. London: George Allen and Unwin, 42-69.

[7] Sainsbury, M. (2000). *Logical Forms: An Introduction to Philosophical Logic*. Malden, Massachusetts: Wiley-Blackwell.

[8] Шуман, А. Н. (2001). *Философская логика: Истоки и эволюция*. Минск: Экономпресс.

[9] Гнатюк, Я. С. (2019). *Комунікативний потенціал культурної предикації*. Івано-Франківськ: Лілея-НВ, 56.

[10] Кант, И. (2006). *Пролегомены ко всякой будущей метафизике, могущей появится как наука; Религия в пределах только разума; Логика. Пособие к лекциям*. Санкт-Петербург: Наука.

philosophical logic is called phenomenological logic. The outlined perspective on the development of philosophical logic is a prerequisite for building a new philosophical logic. Consequently, contemporary philosophical logic is the logic of the continental tradition of philosophy, modernized on the basis of a functional analysis of the logic of the analytic tradition. In this way, the philosophical logic of both traditions interacts with each other and complements each other.

First of all, philosophical logic is the syntax of the language of philosophy, and philosophy itself as philosophical logic is a syntactic analysis of the language of philosophy. Historically, the syntax of traditional philosophical logic is only Frege's standard propositional-functional syntax. Instead, the syntax of contemporary philosophical logic contains as many as three types that emerged in the development of logical theory: Aristotle's elementary subject-predicate syntax, Hegel's modified definitive-specificative syntax, and Frege's standard propositional-functional syntax.

The Aristotelian Syntax

Aristotle's syntax consists of a model of an assertion of an elementary subject-predicate structure and rules of its construction. The basic concepts of this model are subject and predicate, and the way to combine them into coherent statements is grammatical subject-dependent predication. The subject is the part of the sentence or clause about which something is being said, while the predicate says something about the subject. The grammar-dependent subject is the attribution of the predicate as the dependent variable to the subject as an independent variable.

In a sentence, the subject is called the logical or grammatical subject, and the predicate is called the logical or grammatical predicate. Therefore, the model of assertion of an elementary subject-predicate structure is also called an elementary grammatical form. This is the sentence structure of Aristotle's elementary subject-predicate syntax. It is formed by determining the grammar-dependent relationship between the logical subject and the logical predicate. The assertion of the language of elementary subject-predicate syntax is a formal analog of the narrative two-syllable sentence of the natural language, where the grammatical center is expressed by the subject and predicate or their groups. Moreover, according to Phil Corkum, "Aristotle neither explicitly nor consistently distinguishes the surface syntax of natural language utterances and the underlying semantics of such utterances"[1].

In the elementary grammatical form, a subject and a predicate receive a communicative status. The communicative function of the subject is to determine the amount of new knowledge that needs to be substantiated. Conversely, the communicative function of the predicate is to determine the amount of known knowledge, where the truth is already substantiated. The combination of subject and predicate into a coherent statement is understood as a communicative interaction between something new, unexplained, and something known and unproblematic. This is the communicative meaning of constructing a statement of an elementary subject-predicate structure[2].

The Hegelian Syntax

Hegel's inverted definitive-specific syntax consists of a model of assertion of inverted definitive-specific structure and rules of its construction. The basic concepts of this model are definitively specified subject and predicate, and the way to combine them into a single statement is grammatical subject-dependent predication. Definitively specified subject and predicate are subject and predicate terms defined as general, special or singular. Grammatically subject-dependent predication is the attribution of the predicate as the dependent variable to the subject as an independent variable, and conversely, the attribution of the subject as the dependent variable to the predicate as an independent variable. In contrast to the grammar-dependent subject, which has the form "subject is predicate", grammatically subject and predicate-dependent predication has the form "subject is predicate, predicate is subject". For example, Hegel justified the transition from formal-logical to dialectical terminology by its rewriting and creating a new dictionary. According to R. Rorty, Hegel's dialectical method is not an argumentative procedure or a way of unifying subject and object, but simply a literary skill at producing surprising gestalt switches by making smooth, rapid transitions from one terminology to another[3].

The model of assertion of inverted definitive-specificative structure is built by ascending from the abstract to the concrete, transitioning from subject and predicate terms as common names to general, special and singular as general, partial and singular names by means of definitive specification. The latter is the result of the development of the concept of definition. If the definition is based on the category of identity

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[1] Corkum, P. (2015). Aristotle on Predication. *European Journal of Philosophy*, *23 (3)*, 794.

[2] Гнатюк, Я. С. (2019). *Комунікативний потенціал культурної предикації*. Івано-Франківськ: Лілея-НВ, 127.

[3] Rorty, R. (1989). *Contingency, Irony, and Solidarity*. Cambridge: Cambridge University Press, 78.

of *definiendum* and *definiens*, then the definitive specification is based on the identity of *definiendum* and *definiens*, transition from one to another, and specification of the left part of the definition in its right part. The definitive specification is a sentence of Hegeł's language of definitive-specific syntax, where subject and predicate are *definiendum*, and the general, special and singular are *definiens*. It serves as a means of transferring information about communicative status traits from *definiendum* to *definiens*. The communicative function of the subject and the predicate as a *definiendum* and a *definiens* in the definitive specification is to determine the relationship between them by correlating the general, special, and singular and the succession of their logical and factual content. The logical content coincides with the logical form, and the factual content with the content of the logical form.

The Fregean Syntax

Frege was critical of Aristotle's elementary subject-predicate syntax, which was closely related to the grammar-based natural language. He noted that "instead of blindly following grammar, the logician must see his task as freeing himself from the shackles of language"[1]. However, he remarked, "in fact, our logic books continue to draw into it all that does not belong to logic, for example, 'subject' and 'predicate'"[2]. According to Frege, "the grammatical concepts of subject and predicate do not matter for logic"[3]. That is why Frege proposed to replace the grammatical categories of subject and predicate with mathematical categories of argument and function and replacing elementary subject-predicate syntax with standard propositional-functional syntax.

The latter consists of a model of assertion of the standard propositional-functional structure and the rules of its construction. The initial concepts of this model are the propositional function and functionally term-dependent predication. The propositional function is understood as a concept, operation, and statement. According to M. Popovych, "what is called a concept in traditional logic is defined as a predicate in symbolic logic"[4]. That's why logical operation is also a propositional function: „function is an action (operation) that indicates one and only object, which is the meaning of this object"[5]. The propositional function as a logical operation compares with certain objects or their complexes as arguments of a function one and only one element of a set of values – truth or false, which are the values of the function.

The propositional function can also be defined as an assertion that refers to a certain property of an object or the relationship between objects on the condition of their uncertainty. For M. Dummet, Frege emphasized that "(...) every predicate and functional expression is everywhere defined by saying that it must be determinate, for every concept, whether, for any given object, that object falls under it or not (...)"[6].

In Frege's logic, the propositional function has the status of a logical conjunction (true-truth function), and in his predicates logic it can have the status of a predicate or quantifier (object-truth function). The logical conjunction as the true-truth function appears as a kind of propositional function, which compares the truth-true value of the argument with the truth value of the function. A predicate or quantifier as an object-truth function is a kind of propositional function that compares a truth value with certain objects or their complexes. In this case, the domain of a function is a set of objects, and the range of a function is a set of truth values. The argument of the predicate is a term, and the argument of the quantifier is a predicate. Their common value is an assertion that expresses judgments with the truth or false values.

Functionally, term-dependent predication is considered to be a clearly defined relationship between the names of objects as part of an assertion and their truth values. In Frege's predicate logic, the subject of traditional logic is generalized into the notion of a term, and the predicate into the notion of a predicatore. The term is a verbal expression that names individual objects. The main logical function of the term is to play the role of a logical subject in judgment. In turn, the logical subject itself serves as a reference or connection between the object and its name. A predicatore is a verbal expression that represents properties or relations but does not name them. The main logical function of the predicatore is to play the role of a logical predicate in a judgment. In turn, the logical predicate describes the properties of objects or relations between them.

In Frege's predicate logic, the term and the predicator acquire a communicative status. The communicative function of the term as a subject constant is to denote the objects of a particular subject

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[1] Фреге, Г. (2000). *Логика и логическая семантика. Сборник трудов*, Москва: Аспект Пресс, 300.

[2] Там само, 319.

[3] Там само, 318.

[4] Попович, М. (2011). *Бути людиною*. Київ: Києво-Могилянська академія, 40.

[5] Там само.

[6] Dummet, M. (1973). *Frege: Philosophy of Language*, New York, Evanston, San Francisco: Harper & Row, Publishers, 647.

domain by a proper name. The communicative function of the predicatore is to reflect the proper names of the objects as parts of an assertion on a set of truth values that contains two elements: true and false. Its inclusion in the coherent statement is interpreted as a communicative interaction between the function's domain and range. Due to this interaction, it is possible to calculate the truth values of the statements. Therein lies the communicative meaning of constructing a statement of a standard propositional-functional structure.

Three Paradigms of Logic and Syntactic Revolutions

Within the framework of philosophical logic, one can distinguish naturalistic, transcendental, and analytic historical paradigms[1]. The basic theory of the naturalistic paradigm of logic is Aristotle's elementary subject-predicate syntax, based on biological analogy and natural language. This syntax considers human reasoning as logical organisms and, using natural language, describes their types by analogy with animal species and the forms of their organs[2]. The basic theory of the transcendental paradigm is Hegel's inverted definitive-specificative syntax. There is a similarity between Hegel's and Aristotle's syntaxes. The first of them is also based on biological analogy and natural language and considers human reasoning as some logical organisms. However, it describes their types by analogy with the species of plants that grow, reproduce, and genetically transmit information about themselves. The basic theory of the analytic paradigm is Frege's standard propositional-functional syntax, based on physical analogy and formalized language. It considers human reasoning as logical substances and describes their types by analogy with the types of molecules composed of a combination of atoms, which are associated with complex and simple assertions using formal language[3].

Hegel's inverted definitive-specificative syntax and Frege's standard propositional-functional syntax arose as a result of two scientific revolutions in Aristotle's elementary subject-predicate syntax. The first of them was made by Hegel. Instead of Aristotle's imperfect syntax, where the subject and predicate are indefinite common names, he uses the self-constructed inverted definitive-specificative syntax based on the understanding of the assertion of the elementary subject-predicative structure as a definitive specification. According to Hegel, the assertion of an elementary subject-predicate structure is a definitive-specific assertion, where the definitive subject as a *definiendum* is identified with the definitive predicate as a *definiens* and, in the process of this identification, moves from the term position to the predicate position. In his opinion, "the subject is the predicate – this is what is expressed in the judgment", in other words, "in each judgment, the position 'the singular is the general' or 'the subject is the predicate' is expressed (for example, 'God is the Absolute Spirit')"[4,5]. The German thinker noted that the subject and the predicate are only common names that need to be concretized: "as names, they are something indefinite, something that has yet to be defined and therefore it is no more than a name"[6]. Hegel understood the definitive specification of subject and predicate as a procedure of ascent from the abstract to the concrete. In this process, the subject and the predicate, expressed by common names, acquire the status of general, special, and singular, which are expressed by common, partial, and singular names. Hegel's scientific revolution in Aristotle's elementary subject-predicate syntax completed the transition from the naturalistic to the transcendental paradigm of logic.

The second scientific revolution in Aristotle's elementary subject-predicate syntax was carried out by G. Frege. He preferred to imitate not a grammatical but a mathematical style and proposed to replace the grammatical perspective, which involves constructing left-to-right sentences, with the mathematical right-to-left perspective. Frege believed that his proposal to replace the grammatical categories of subject and predicate with the mathematical categories of argument and function would be accepted by the scientific community. Furthermore, he predicted that „the replacement of the concepts of subject and predicate by the concepts of function and argument would eventually be recognized"[7]. Therefore, Frege's scientific revolution in Aristotle's elementary subject-predicate syntax initiated the transition from the naturalistic to the analytic paradigm of logic.

Despite terminological differences in formulation, Hegel's and Frege's scientific revolutions proposed quite similar solutions to the problem of the uncertainty of Aristotle's subject and predicate terms. Hegel understood Aristotle's subject and predicate terms as indefinite concepts[8]. According to Frege,

[1] Шуман, А. Н. (2001). *Философская логика: Истоки и эволюция*. Минск: Экономпресс, 7.

[2] Гнатюк, Я. С. (2019). *Комунікативний потенціал культурної предикації*. Івано-Франківськ: Лілея-НВ, 262.

[3] Там само, 263.

[4] Гегель, Г. В. Ф. (1975). *Энциклопедия философских наук. Наука логики*. Москва: Мысль, 350.

[5] Гегель, Г. (1999). *Наука логики*. Москва: Мысль, 707.

[6] Там само, 701.

[7] Фреге, Г. (2000). *Логика и логическая семантика. Сборник трудов*. Москва: Аспект Пресс, 67.

[8] Гегель, Г. (1999). *Наука логики*. Москва: Мысль, 701.

the propositional function, which generalizes Aristotle's subject and predicate, is also an indefinite concept[1]. Using the method of ascent from the abstract to the concrete, Hegel definitively specified subject and predicate terms as general, special, and singular. Frege also used substitution semantics to replace subject variables with subject constants. Therefore, Hegel's method of ascent from the abstract to the concrete and Frege's substitutive semantics are very comparable. Although both of them use different methods, they solve the same problem: define indefinite concepts.

Grammatical and Mathematical Styles

Taking into account the above-mentioned features, elementary subject-predicate, inverted definitive-specificative, and standard propositional-functional historical types of logical syntax can be generalized in grammatical and mathematical styles. The first of them can be called the Aristotelian style, and the second – Fregean style. The first functions in the context of elementary subject-predicate and inverted definitive-specificative types of logical syntax, and it is common to both of them. Aristotle, Kant, Hegel, or Husserl imitated the grammatical style of logical syntax in the statement construction of an elementary subject-predicative structure. They combined the grammatical subject as a logical subject and the grammatical predicate as a logical predicate into the statement of the elementary subject-predicative structure, which is expressed by a two-part declarative sentence by means of the grammatical sentence construction technique.

The mathematical style functions only in the context of standard propositional-functional syntax. Applying the mathematical statement construction technique of a standard propositional-functional structure, Frege combined a term as a logical subject and a predicate as a propositional function into a coherent statement, which is expressed by a formula in the propositional logic or as a term and formula in the predicate logic. Therefore, the historical syntax of philosophical logic includes elementary subject-predicate, inverted definitive-specificative, and standard propositional-functional types, or grammatical and mathematical styles of logical syntax.

Modernized Models of Contemporary Philosophical Logic

The syntactic construction of the theory of contemporary philosophical logic can be carried out by two successive definitive specifications: the elementary grammatical form as a propositional function and the propositional function as a modified grammatical form. If the elementary grammatical form is an elementary subject-predicate syntax statement, and the propositional function is a standard propositional-functional syntax statement, then the modified grammatical form is a modified subject-predicative syntax statement. In this syntax, simple subjects and predicate terms acquire the new status of the propositional function, retaining the old status of the elementary grammatical form in the character of complex subjective and predicate terms, whose extended structure contains the propositional function included in the elementary grammatical form. This is how the modified subject-predicate syntax of contemporary philosophical logic is formed.

Modified subject-predicate syntax consists of a model of assertion of a modified subject-predicate structure and rules for its construction. This model is formed in the process of attributing a complex predicate term with the status of a logical predicate as a propositional function to a complex subjective term with the status of a logical subject as a subject term by imitating the mixed grammatical and mathematical style of logical syntax.

Aristotle's assertion of metaphysical logic as the logic of transcendent metaphysics, Husserl's phenomenological logic as the logic of immanent metaphysics and Hegel's dialectical logic as the logic of procedural metaphysics can be represented in a modified form by means of contemporary philosophical logic. The upgraded models of the above-mentioned logic can be outlined as follows. There are three types of statements in Aristotle's modernized model of metaphysical logic: substantial-essential, substantial-qualitative, and substantial-quantitative. In a substantial-essential statement, the place of a simple subjective term is taken by the first substance (individual thing or separate beingness), and the place of a simple predicate term is taken by the second substance (species or genus). It is represented by the scheme "S(r) – P(s)", which reads as follows: "The function of a simple subject (S) is performed by the first substance (r), and the function of a simple predicate (P) is performed by the second substance (s)". For example, "Here it is (S(r)) is a horse (P(s))". In this case, the predicate of the substance is attributed to the individual.

In a substantial-qualitative statement, the place of a simple subjective term is taken by the first substance (concrete individual), and the place of the simple predicate term is taken by quality. It is represented by the scheme "S(r) – P(a)", which reads as follows: "The function of a simple subject (S) is performed by the first substance (r),

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[1] Розин, В. М. (2014). *Логика и методология: От «Аналитик» Аристотеля к «Логико-философскому трактату» Л. Витгенштейна*. Москва: ЛЕНАНД, 134.

and the function of a simple predicate (P) is performed by quality (a)". For example, "This rose (S(r)) is red (P(a))". In such circumstances, the predicate of quality is attributed to the individual thing.

In a substantial-quantitative statement, the place of a simple subjective term is taken by the first substance (individual essence), and the place of a simple predicate term is taken by quantity. It is represented by the scheme "S(r) – P(c)", which reads as follows: "The function of a simple subject (S) is performed by the first substance (r), and the function of a simple predicate (P) is performed by quantity (c)". For example, "This tree (S(r)) is high". In this situation, the predicate of quantity is attributed to the individual thing.

In Husserl's modernized model of phenomenological logic, it is possible to distinguish between statements of finite and infinite type. In a finite statement, a simple subject term is related to a finite set of simple predicate terms. It is represented by the scheme "S(f) – P(e)", which reads as follows: "The function of a simple subject (S) is performed by phenomenon (f), the function of a simple predicate (P) is performed by eidos (e)". For example, "Cold air (S(f)) is refreshing (P(e))". It can also be represented by another scheme "S(f) – $P_1(e_1)$ – P2(e_2)", which reads: "The function of a simple subject (S) is performed by a phenomenon (f), the function of the first simple predicate (P_1) is performed by the first eidos (e_1), the function of the second simple predicate (P_2) is performed by the second eidos (e_2)". For example, "Fresh air (S(f)) refreshes ($P_1(e_1)$), invigorates ($P_2(e_2)$)".

In an infinite statement, a simple subject term is related to an infinite number of simple predicate terms. It is represented by the scheme "S(f) – P(e) – ∞", which reads as follows: "The function of a simple subject (S) is performed by phenomenon (f), the function of a simple predicate (P) is performed by eidos (e), etc. (∞)". For example, "Fresh air (S(f)) is refreshing (P(e)), etc. (∞)". It can also be represented by another scheme "S(f) – $P_1(e_1)$ – $P_2(e_2)$ – ∞", which reads: "The function of a simple subject (S) is performed by a phenomenon (f), the function of the first simple predicate (P_1) is the first eidos (e_1), the function of the second simple redicate (P_2) is performed by the second eidos (e_2), etc. (∞)". For example, "Fresh air (S(f)) refreshes ($P_1(e_1)$), invigorates ($P_2(e_2)$), etc. (∞)"[1]. According to Husserl, the essence of predicative synthesis is the active implementation of the synthetic transition from "S" to "p", the active implementation of the unity of identity between "S" and "p"[2].

Husserl's traditional model of phenomenological logic is based on the unity of logic, ontology, phenomenology, and epistemology[3]. Accordingly, the world in his logic appears as a totality of individual objects, which have certain properties and relations. However, for W. Smith, "(…) what we count as an object is not only what can have properties and relations (ontology), but also what can be represented semantically in language (logic), and can be represented intentionally in experience (phenomenology), and can be represented with evidence in experiential knowledge or judgment (epistemology)"[4]. Therefore, there is an inseparable unity of these four aspects, which is also inherent in the proposed modernized model of phenomenological logic.

There are three types of statements in Hegel's modernized model of dialectical logic: general-special, general-singular, and special-singular. A simple subject is a general in a general-special statement, and a simple predicate is a special. It is represented by the scheme "S (z) – P (y)", which says: "The function of a simple subject (S) is performed by the general (z), the function of a simple predicate (P) is performed by the special (y)". For example, "A plant (S(z)) is a flower (P(y))". In a general-singular statement, a simple subject is a general, and a simple predicate is a singular. It is represented by scheme "S(z) – P(x)", which reads: "The function of a simple subject (S) is performed by the general (z), the function of a simple predicate (P) is performed by the unit (x)". For example, "A plant (S(z)) is a rose (P(x))". In a singular statement, a simple subject is a special, and a simple predicate is a singular. It is represented by scheme: "S(y) – P(x)", which reads as follows: "The function of a simple subject (S) is performed by a singular (y), the function of a simple predicate (P) is performed by a singular (x)". For example, "A flower (S(y)) is a rose (P(x))"[5].

Definitive Specification

Definitive specification plays a major role in the syntactic construction of contemporary philosophical logic theory. However, the definitive specification of subject and predicate terms cannot be understood as a simple combination of traditional and modern approaches to reasoning analysis. The definitive specification

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[1] Гнатюк, Я. С. (2019). *Комунікативний потенціал культурної предикації*. Івано-Франківськ: Лілея-НВ, 49.

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is not so much a combination of definition and definition as a transition from one to another or a translation of terms of one logical syntax into the language of another logical syntax. In this context, it should be noted that Hegel substantiated the direct definitive specification of subject and predicate terms in the form of dialectical categories such as general, special, and singular. With this approach, we must keep in mind two sets of terms: "subject – predicate" and "general – special – singular", as well as the relations between them. Due to the high probability of assuming logical *errors*, the efficiency of this approach is quite low.

However, contemporary philosophical logic is based on the double indirect definitive specification of subject and predicate terms. In the first definitive specification, subject and predicate terms are identified with the propositional function and become the term and predicatore as the logical subject and logical predicate. In the second definitive specification, these terms acquire the status of complex subjects and predicates, which in generalized form contain both the term and the predicatore and a "substance – quality – quantity", or "intention – phenomenon – eidos", or "general – special – singular". Hegel would hardly agree with such an approach to the understanding of the definitive specification. According to Badiou, Hegel would reject the notion of a variable, which he considered vague and unacceptable[1]. As is known, a function is considered to be the relation between an independent variable as an argument of the function and the dependent variable as the value of the function. It follows from Hegel's logical concept of the variable that the functional analysis of the assertion of the language of elementary subject-predicate syntax is inappropriate. Hegel would also disagree with the notion of a definitive specification based on variables. Therefore, the concept of indirect definitive specification not only continues the tradition of dialectical analysis of the conceptual structure of Hegel's philosophical theory but also marks a separation from it.

In the process of statement construction of the modified subject-predicate structure, contemporary philosophical logic employs complex subjective and predicate terms. There is an informational interaction between them. On the one hand, the essence of this communication lies in the sequential translation of meanings of simple subject and predicate concepts of the subject-predicate syntax into the standard propositional-functional syntax (concepts of term and predicatore) and, on the other hand, in the translation of meanings of term and predicatore into complex subject and predicate concepts of the modified subject-predicate syntax.

Contemporary philosophical logic, because of the indirect definitive specification, allows for the use of two opposing predicates to describe the paradoxical historical development of philosophical thought as well as the simultaneous existence of radically different philosophical concepts, theories, and systems. Taking into account the principle of unity of the history of philosophy and philosophical logic, modern philosophical logic can be effectively used in the practice of historical and philosophical research, in the construction of historical-philosophical theories and in its syntax analysis.

Application of Contemporary Philosophical Logic

Contemporary philosophical logic is a formal-informal logic. It has a formal syntax and an informal semantics. Formal syntax is a modified subject-predicate syntax, and informal semantics is a substitute semantics of philosophical categories. Applying the rules of substitution of subject variables in complex subjective and predicate terms, it is possible to substitute such historical-philosophical categories as Hegel's cultural formation[2], Deleuze's plan of immanence[3] or Lakatos' internal history[4], as well as to construct new statements in the language of historical-philosophical theory.

Examples of such statements include the following: 1) formational-formational statements: "S (f) – P (f)". For example: "Ancient philosophy precedes the philosophy of the Enlightenment"; 2) formational-immanent statements: "S(f) – P(i)". E.g.: "Ancient philosophy is Eidetics"; 3) formational-reconstructive statements: "S(f) – P(r)". E.g.: "Ancient philosophy is the categorical understanding of the reality"; 4) immanent-immanent statements: "S (i) – P (i)". E.g.: "Eidetics precedes Criticism"; 5) immanent-formational statements: "S (i) – P (f)". E.g.: "Criticism is the project of modern philosophy"; 6) immanent-reconstructive statements: "S (i) – P (r)". E.g.: "Phenomenology applies phenomenological reduction"; 7) reconstructively-reconstructive statements: "S (r) – P (r)". E.g.: "Continental philosophy coexists with analytic philosophy"; 8) reconstructively-formational statements: "S (r) – P (f)". E.g.: "Analytic philosophy is the philosophy of modernity"; 9) reconstructively-immanent statements: "S (r) – P (i)". E.g.: "Continental philosophy appeared at the same time as Criticism".

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These schemes are syntactic rules for statement construction of a modified subject-predicate structure, and the criteria for distinguishing between correctly and incorrectly constructed statements, as well as the grounds for removing the latter ones from the historical-philosophical theory.

A rational reconstruction of the logical and methodological communication that took place in Aristotelian Metaphysics can be an example of using contemporary philosophical logic in historical-philosophical analysis. In this case, logical and methodological communication is understood as an information interaction between Aristotle's and Pythagorean philosophical theories. Both of them are components of the studied culture, while cultural-predicative analysis is an investigating culture that includes contemporary philosophical logic and the methodology of historical-philosophical intercultural communication. It should be noted that Aristotle's logic of subject-predicate discourse in cultural-predicative analysis is interpreted as the logic of modified subject-predicate discourse, where complex terms are used instead of simple subject and predicate terms. Aristotle's doctrine of the four kinds of causes and principles of things' existence in cultural-predicative analysis is interpreted by means of cultural predication as the methodological tool of historical-pilosophical intercultural communication.

In the process of cultural predication, the language, logic, and methodology of Aristotle's investigating culture are attributed to the Pythagorean studied culture, which is translated into Aristotle's language of investigatin culture and analyzed by means of its logic and methodology. Taking into account the fact that Aristotle's philosophical language is an ontology of metaphysical categories, in the modern sense, its logic is the logic of modified subject-predicative discourse, and its methodology is a causal methodology. The key Pythagorean concepts can be translated by means of Aristotle's logic of the modified subject-predicative discourse and are presented by three types of statements: substantial-essential, substantial-qualitative and substantial-quantitative. By using the categorical analysis, this types of statements can provide a better understanding of the ontology of categories in both Aristotle's investigating culture and studied Pythagorean culture. Substantial-essential statements can be represented as follows: 1) "Individual thing $(S(r))$ is the boundary of the body $(P(s))$"; 2) "Individual thing $(S(r))$ is the surface of the body $(P(s))$"; 3) "Individual thing $(S(r))$ is the body lines $(P(s))$"; 4) "Individual thing $(S(r))$ is the point of the body $(P(s))$".

Material-qualitative statements can be presented in the following ways: 1)
"Circle $(S(r))$ is the most beautiful of the flat figures $(P(a))$"; 2) "The sphere $(S(r))$ is the most beautiful of the three-dimensional figures $(P(a))$".

Substantive-quantitative statements can be presented in various ways: 1) "The beginning of everything $(S(r))$ is one $(P(c))$"; 2) Numbers $(S(r))$ generate points $(P(c))$"; 3) "Points $(S(r))$ form lines $(P(c))$"; 4) "Lines $(S(r))$ form flat figures $(P(c))$"; 5) "Flat $(S(r))$ figures form three-dimensional figures $(P(c))$".

The methodological translation of Pythagorean studied culture is carried out by means of Aristotle's causal methodology. This methodology is based on Aristotle's doctrine on four types of causes: material, formal, efficient, and final. Aristotle's doctrine summarizes the achievements of his philosophical predecessors. Therefore, the material cause was studied by the Miletus and Atomistic schools, the formal cause by the Pythagoreans and Platonists, the active cause by the school of evolutionism and the Sophists, and the final cause by the school of noology and the Athenian school of philosophy. Based on the above, from the fact that Pythagorean philosophy of mathematics developed a formal cause, the Pythagorean studied culture in methodological terms represents the formal principle thing's existence. From the Aristotle's investigating culture point of view, Pythagorean studied culture is based on the formal principle of the individual thing's existence. For Aristotle, the form performs several functions: the internal model, rationally recognizable structure, control dynamics and final purpose. These values must be taken into account in the functional analysis of the formal principles of the studied Pythagorean culture.

In the history of philosophy, Aristotle's logic, Hegel's logic, and Frege's logic all exist simultaneously. However, philosophical logic in the traditional sense is only Fregean logic. Contemporary philosophical logic eliminates the discrepancy between the history of philosophy and philosophical logic and balances the relationship between them through the establishment of its proportions. It substantiates the communicative interaction between historical logics and their syntaxes. As a result, Aristotle's logic, Hegel's logic, and Frege's logic get their proper place in the history of philosophy and philosophical logic.

Conclusions

Within contemporary philosophical logic, elementary subject-predicate and standard propositional-functional syntaxes are not synthesized on the basis of inverted definitive-specific syntax. Moreover, elementary subject-predicate and inverted definitive-specific syntaxes are not reduced to standard propositional-functional syntax. Contemporary philosophical logic does not offer synthesis or reduction,

which unify historical types and styles of logical syntax, but communication – the information interaction, definitive specification, and conceptual translation. Communicative interaction allows to preserve the autonomous status of elementary subject-predicate, inverted definitive-specificative, and standard propositional-functional syntaxes and the specifics of their grammatical and mathematical styles.

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