

ABSTRACTS

ROMANIAN THINKERS ON THE *PRINCIPIA MATHEMATICA*

TITUS LATES

Either ignored or reluctantly accepted, at the beginning, *Principia Mathematica* draw the attention of Romanian logicians starting with Nae Ionescu, Gr. C. Moisil and O. Onicescu, who saw in it the modern elaboration of mathematical logic that permanently influenced the evolution of logic. An important part in exposing its system was that of A. Dumitriu, who set up a „natural reconstruction” of the system, starting from the principles of logic. During the period dominated by dialectical materialism, *Principia Mathematica*, incorporated within the ensemble of logicist constructions, was critically examined and permanently presented, sometimes in a formalized manner. The school of logic from Iași, starting with P. Botezatu, took into account some issues of it and, during the last period, some Romanian logicians keep on referring to it.

Keywords: mathematical logic, formal system, axiomatization, type theory, logicism, multi-valued logics.

THE MODERN CONCEPT OF GRAMMAR

ALEXANDRU BOBOC

In this study I will plead in favour of the idea that thinking and speech build up an unity, that the very language is not a simple communication means, but plays an active regenerative role. Beyond the duty of the grammar of a language of providing rules for building-up. Out of basic units, some meaningful phrases, the complex activity of the mind intervenes, in which the creative function of language is integrated. That is why, „grammaticalness” does not limit itself to the criterium of rule but it is also structural for the language and the unity language-thinking.

Keywords: grammatical structure, grammatical rule, linguistic sign, natural language, linguistic universals.

OUTLINES OF CRITICAL THINKING

MARIUS DOBRE

The paper sketches the main features of a relatively new field of research, i. e. critical thinking. Together with a short history and a „hostile” perspective upon critical thinking, the paper displays its statute as separated from logic, wider than or included in logic. One also presents some practical applications of critical thinking.

Keywords: logic, critical thinking, history of logic.

INCOMPLETENESS; MODAL ASPECTS

MIRCEA DUMITRU

Gödel's ground-breaking work influenced essentially and enormously all XX-th century thinking in mathematical logic, philosophical logic (the idea of axiomatizing modal logic by adding modal axioms to a sound and complete basis for propositional calculus originates with Gödel), and recently in some areas of philosophy.

In my paper I first sketch a connection between Gödel's first incompleteness theorem and the modal approach to it with inprovability logic (modal logic of provability), and then I discuss at length a curious semantic incompleteness phenomenon which occurs in modal logic *per se*.

Propositional modal logic is usually viewed as a generalization and extension of propositional classical logic. The main argument of the paper is that a good case can be made that modal logic should be construed as a restricted form of second order classical logic. To that purpose I will firstly cover ground and introduce the main modal metalogical concepts both on the modal side and on the second-order side of the construction. The presentation will lead to original work in which I will examine one aspect of this second order connection having to do with an incompleteness phenomenon. The leading concept is that modal incompleteness is to be explained in terms of the incompleteness of standard second order logic, since modal language is basically a second order language.

Keywords: mathematical logic, philosophical logic, Gödel's first incompleteness theorem, modal logic of provability, second order language

THREE FORMS OF PARTITIVE LOGIC

IOAN BIRIȘ

Our paper starts from the hypothesis that both natural reality, and the social and spiritual realm are full of a lot of phenomena and processes that are explained by means of partitive relation; this renders necessary the various attempt to establish the logics that are most adequate to this type of relation. On our opinion, at present, we have three main models of partitive logic: *mereology*, created by the Polish logician Stanislaw Lesniewski; *holology*, especially debated upon by the Austrian thinker Franz Brentano; *holomery*, which was elaborated by the Romanian philosopher Constantin Noica.

Keywords: class, mereology, holology, holomery, partitive relation.

NEGATIONS, CONCLUSION FUNCTIONS, AND PREMISE FUNCTIONS

GABRIEL ILIESCU

Within the present paper I assume some tools that I used in a previous paper. The field in which one finds the following ideas is the table of binary logic truth functions. The tools are: a rewriting of the functions of this table starting from the consequential logical relation among functions and lists of contrary or subcontrary functions, in each case. Starting here, I decided to use the denominations φ and ψ for functions, respectively. The remarks and hypotheses the present paper checks out are that we can find out: 1. the conclusions of a φ function, by applying contradiction to its contrary

functions; 2. the premise-functions of a ψ , by applying contradiction to its subcontrary functions; the premises of a ψ function, by applying contradiction to the conclusion of a ϕ function; 4. the conclusions of a ϕ function, by applying contradiction to the premises of a ψ function.

Keywords: bivalent logic, contrary function, subcontrary function, contradiction, conclusion

TYPES OF REASONING

IONEL NARIȚA

Reasonings are elements of the P^2 set, where P is the set of sentences (P^2 is the set of pairs of sentences). In its turn, the P^2 set is divided into three subsets: a) the set of pairs of sentences related by *superalternation*; b) the set of sentences related by *subalternation*; c) the set of *independent* among themselves sentences. Thus, all reasoning must belong to one of the three; it follows there are three types of reasoning: a) in the case of *deductive* reasoning, the premise superalternates the conclusion (the premise is the sufficient condition, the conclusion is the necessary one); b) the premise of a *hypothetic* reasoning subalternates the conclusion (the premise is necessary, the conclusion is sufficient); c) *independent* reasoning occurs when the premise is independent from the conclusion. By studying the soundness conditions for the three types of reasoning, one shows that, despite prior attempts, hypothetic reasonings are not inductive ones. On the other side, logic uses only deductive reasonings.

Keywords: reasoning, hypothesis, deduction, induction, abduction.

NOTIONS, CONCEPTS AND GENERA OF CATEGORIES IN ARISTOTLE'S *DE CAELO*

ȘERBAN N. NICOLAU

The paper deals with Aristotle's concept of notion and its species, starting with the singular, species, and genus and ending with categories, relations among them, and pre-inference relations among these notions that are displayed by means of examples taken from the treaty on natural philosophy *De Caelo*.

Keywords: notion, concept, singular, species, genus, category, identification, generalization, determination.

THE MAIN FORMS OF SPECULATIVE THINKING

ALEXANDRU SURDU

The paper displays, in a comparative manner, the classical, logical-mathematical and hegelian viewpoints regarding the forms of thought (notion, judgement, reasoning), stating that each of them corresponds to a specific ontic realm, has its own psychological processes and own logical forms.

The Hegelian logic is characterised by the application of the forms of thought (concept, judgement, reasoning) to categorial contexts. As a psychological process, this use of the forms of

thought corresponds to meditation, as a ontic realm it corresponds to infinite totalities and as language to categorial schematism.

Keywords: thought, category, notion, concept, judgment.

ARISTOTLE AND HEGEL ON THE QUALITY

DRAGOȘ POPESCU

The present paper sets up a comparative analysis of the category of Quality in the cases of Aristotle and Hegel. Aristotle's category of Quality, as it shows up in some illustrative paragraphs (*Chapter 8* of the *Categories* and *Metaphysics*, D, 14), has two main meanings: a. the criterion for differentiating among individuals; b. the criterion that allows the grouping of individuals within the same species. The two meanings are not strictly separated, and this fact led, in time, to some mistakes.

For Hegel, Quality is – by contrast to Aristotle – strictly incorporated into a systematic categorial context. Belonging to the group of categories that are included into the Theory of Being, Quality proves itself to be complementary to the category of Essence, that belongs to the categorial group of the Theory of Essence. Quality fundamentally relates not to Quantity, but with Essence as reflected in itself. This conjunction is not arbitrary, but constitutes a real revolution, a main event of thinking.

Keywords: category, quality, essence, truth, determination

THE PRINCIPLES OF CLASSICAL LOGIC IN HEGEL'S SCIENCE OF LOGIC

ȘTEFAN-DOMINIC GEORGESCU

The paper presents some aspects regarding Hegel's view on the principles of logic. The main point is that the German philosopher set up a speculative perspective upon these principles and proved that their settlement as principles of thought is illegitimate, since they can be deduced and integrated within the system of logic. Furthermore, the place of contradiction proves to be especially important, since Hegel's system is a dialectical one.

Keywords: identity, contradiction, excluded middle, sufficient reason, diversity, speculative logic.

REMARKS ON TRANSCENDENTAL SIGNIFICANCE OF HEGEL'S LOGIC

CLAUDIU BACIU

Starting from the meaning of the term „transcendental” within Kant's philosophy, this paper displays the manner in which, by means of a theoretical reevaluation which can be found in Fichte and Schelling's philosophy, Kantian transcendental logic provides the support for the understanding of Hegel's attempt to reanimate metaphysics.

Keywords: formal logic, transcendental logic, transcendental philosophy, ontology, metaphysics.

THE PROBLEMATIC REGIME OF AESTHETIC VALUE JUDGMENT

FLOREA LUCACI

This paper deals with the issue of aesthetic judgment and the possibility of using an analogy with the logical statute of cognitive sentences. Thus, logic can contribute to setting up a specific manner of „artistic knowledge”. We oppose to those that exclude logic from the realm of art. Our main thesis is that the logical analysis of language, of reason to be of axiological sentences and aesthetic predicates helps to elevate the theory of art at the level of systematic conceptual thinking. The point is that aesthetic value judgment is an essential component of the method of reflecting upon humans onto-axiological states. We rely on Plato’s statement, that all experts can contribute to the demonstration of this conclusion.

Keywords: aesthetic judgment, cognitive sentence, axiologic sentence, artistic knowledge, systematic thinking

SEMIOTIC INSTANCES OF DISPOSITIONAL EXPLANATION

TEODOR DIMA

We consider that the epistemological recourse to the semiotic dimensions could lead to peace: those in favour of an epistemology without a knowing subject are right (if they keep themselves within the syntactic and semantic frames of theoretical constructions) and those who add a knowing subject are also right (if they want to express the concrete process of building up scientific convictions).

Keywords: semiotic strategy, syntax, semantic, pragmatic.

