Summaries

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Zdzisław Augustynek

Location and extension

The paper presents an outline of two related space-time notions: the notion of location and the notion of extension. The first notion concerns only physical objects, the second notion referrs also to space-time objects. The approach to both notions is here non-metric or — strictly speaking — topological. The construction is carried out within the ontology of point-eventism. Hence two problems appear immediately: the problem of location of certain sets and the problem of their extension. The reason is that according to the ontology of point-eventism all the physical as well as space-time objects — only point events excepted — are sets founded in such events. The author analyzes also the very relation between location and extension.

Jerzy Rayski

Unification of natural laws

Preceded by a historical introduction the problem of a multi-dimensional extension of the geometrical framework of physical reality is discussed. Both metrical space-time and superspace are taken into account. Arguments in favour of a six-dimensional space-time D=6 are presented. A conviction that — according to «the spirit of Kaluza's theory» — all vector fields should be incorporated into the metric is a prejudice: some are ingredients of metric, but some other are genuine multivectors. The idea of supersymmetry is taken into account only in so far that fundamental fields form a supermultiplet of highest extension N=8, but supersmmetry is only global whereas local interactions do not need to be fully supersymmetric but locally gauge invariant and generally relativistic (replacing partial by covariant derivatives). Even a global supersymmetry may soften convergence difficulties so that super-string may be dispensed with. The set of all fields including 3 families of quarks and leptons may be arranged into a table resembling Mendelejev's one. A generalized Higgs mechanism explains high value of masses, also that of top quark.

Jan M. Żytkow

Automation of scientific disovery: its present and future

Machine discovery is a new area of artificial intelligence, dealing with computer systems which make discoveries. An automated discovery system can be imagined similarly to a human discoverer or to the community of scientists-discoverers, as a

robot that makes experiments and uses empirical data to develop theories. The author argues that construction of discovery systems and theories of their functioning is a new and attractive program for the philosophy of science. He revievs the existing discovery systems and presents the theoretical schema emerging from their analysis. A large reference list provides directions for further studies.

Eugueniusz Żabski

An algebraic semantics for the nihilistic propositional calculi

From a formal point of view, the nihilistic propositional calculi, called in this text "npc", are such propositional calculi that include three unary propositional conectives: T, F, ~, and one binary propostional connective ≡. They read respectively: true, false, untrue that, if and only if. Their theorems are, among other things, such expressions as: Tp ≡ p, Fp ≡ ~p, with p being a propostional variable. The four npc are presented in this work, i.e. one two-valued, two three-valued, and one four-valued. Moreover, two of them are also paraconsistent calculi.

Npc are constructed by means of the axiomatic method. Following the presentation of npc axioms, the four so called n-algebras are introduced. The npc axioms are proved to be adequate to appropriate n-algebras, i.e. sets of theorems and tautologies of each npc are identical.

Andrzej Hankała

Cognitive selectivity of mind in the sphere of memory

The central - and philosophically important - question connected with selectivity is the question of the nature of this phenomenon as a specific feature of human cognitive system. It is revealed in acts of two types. Acts of the first type are selective extraction of concrete as well as symbolic informations derived from the external world, and contained in sensoric representations. Acts of the second type are selective actualization of informations preserved in an individual permanent memeory. The hypothesis of existing general mental disposition common to acts of both the types is very attractive. The author analyzes some psychological (empirical) and philosophical aspects of these problems.

Leszek Nowak

On fluency of scientific theory

The author, starting form the critical review of Andrzej Klawiter's book (in Polish) *Reserch attitude and the structure of theoretical choice*, comes to consider questions concerning the opposition act/product in science and the problem of scientific interpretation. The considerations give him an occasion to formulate some rules of canonical scientific text formation (i.a. rules of cognitivism, clarity, contradiction, logical consistency, completness and consistency of interpretation).

Janusz Kraszewski

On some controversies in the modern philosophy of science

The aim of the paper is to reconstruct the essential content and main sources of Larry Laudan's position in the philosophy of science. A background for the reconstruction is provided by the controversy about the nature of changes in science and by the controversy about so called «scientific realism».

Kazimierz Twardowski

The psychology of thinking

The text, first published here in virue of the survived original typescript, contains an outline of the series of lectures delivered by the founder of Lvov-Warsaw School in 1908 at John Casimir University. The notions like "thinking", "presentation", "memory",. "association" are objects of his minute inquiry.