Abstracts

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Michael Devitt, The "Linguistic Conception" of Grammars

The received Chomskian view is that a grammar is about the language faculty. In contrast to this "psychological conception" of linguistics I have argued in *Ignorance of Language* for a "linguistic conception". This paper aims to strengthen the case for this conception. It argues that there is a linguistic reality external to the mind and that it is theoretically interesting to study it. If there is this reality, we have good reason to think that grammars are more or less true of it. So, the truth of the grammar of a language entails that its rules govern linguistic reality, giving a rich picture of this reality. In contrast, the truth of the grammar does not entail that its rules govern the psychological reality of speakers competent in the language and it alone gives a relatively impoverished picture of that reality. For, all we learn about that reality from the grammar is that it "respects" the rules of the grammar.

Keywords: psychological conception, linguistic conception, Chomskian, grammars, linguistic competence, respect constraint, representational system, linguistic realism, Rey

Jarek Gryz, The Frame Problem in Artificial Intelligence and Philosophy

The field of Artificial Intelligence (AI) has been around for over 60 years now. Soon after its inception, the founding fathers predicted that within a few years an intelligent machine would be built. That prediction failed miserably. Not only hasn't an intelligent machine been built, but we are not much closer to building one than we were some 50 years ago. Many reasons have been given for this failure, but one theme has been dominant since its advent in 1969: The Frame Problem. What looked initially like an innocuous problem in logic, turned out to be a much broader and harder problem of holism and relevance in commonsense reasoning. Despite an enormous literature on the topic, there is still disagreement not only on whether the

problem has been solved, but even what exactly the problem is. In this paper, we provide a formal description of the initial problem, the early attempts at a solution, and its ramifications both in AI as well as philosophy.

Keywords: artificial intelligence, frame problem, symbols and symbol systems

José Tomás Alvarado Marambio, The Relation of Instantiation

It is argued that instantiation, i.e. the relation between particular objects and properties (conceived as universals or tropes) is indeed an ontologically robust relation. The relation of instantiation is required to explain the difference between a state of affairs of, for example, *a* being F, and the mereological fusion [*a* + F]. If instantiation is a true relation, then Bradley's Regress ensues. It is argued, nevertheless, that the regress cannot be taken as a reason to reject the existence of instantiation or to reject the existence of properties as entities numerically different from particular objects to which the properties should be related. All the nominalist alternatives suffer from similar regresses. Bradley's Regress should, therefore, be addressed head-on. After dismissing all the applicable ways in which an infinite regress may be deemed vicious, it is argued that Bradley's Regress is — in a sense — harmless.

Keywords: instantiation, properties, universals, particulars, states of affairs, Bradley's Regress

Morteza Sedaghat Ahangari Hossein Zadeh, How Might a Davidsonian Rescue the Normativity of Meaning?

For meaning normativism to hold, meaning must have a constitutive part which is obligation-producing. I claim in this paper that linguistic communication is such a constitutive part. I try to show this by means of appeal to Davidson's triangulation thesis. If I am successful, it may fairly be said that "a Davidsonian can rescue the normativity of meaning".

Keywords: normativity of meaning, linguistic communication, triangulation, Davidson

Wojciech Rostworowski, The Attributive Use and Russell's Paradigm

According to the prevailing view, Russell's theory of descriptions provides an adequate semantic account of sentences with definite descriptions in the attributive use. The author challenges this assumption. Firstly, he presents two general 'Strawsonian' objections to Russell's theory, which, as he argues, are valid in the case of attributive assertions. Those are arguments against the so called existential reading and the uniqueness-reading of an attributively used sentence of the form "The *F* is *G*". Finally, the author presents his own objection which appeals to the fact that the Russellian analysis does not account for an intuitive inferential property of attributive assertions.

Keywords: attributive use, definite descriptions, incomplete descriptions, Russell's theory, Strawson, Donnellan

Karol Polcyn, Conceivability, Possibility and Rationality

Chalmers argues that ideal conceivability (conceivability on ideal rational reflection) entails possibility and on this basis assumes that zombies are possible and, therefore, that materialism is false. I argue that the paradigm cases of conceivability intuitions that Chalmers takes to be reliable guides to possibility are not only conceptually coherent, even on ideal rational reflection, but in addition have some rational explanation. The conceivability of zombies, however, has no rational explanation. So it is not ad hoc to deny that the conceivability of zombies entails possibility.

Keywords: conceivability, possibility, rationality, mind-body problem

Piotr Giza, Machines and Scientific Method

The paper explores possible influences that recent developments in the field of a branch of AI called Automated Discovery Systems might have upon some aspects of the old debate between Francis Bacon's inductivism and Karl Popper's falsificationism. Francis Bacon advocates mechanical induction as the legitimate, infallible method of science, and Karl Popper proposes his famous falsificationist view, according to which science proceeds by subsequent conjectures and refutations, and the question about where scientific hypotheses come from neither needs, nor is capable of, logical analysis. The traditional method of discussing such methodological debates relies on the analysis of various historical examples of discoveries in order to see how well the two models of scientific method account for them.

A British philosopher of science and historian of mathematics, Donald Gillies, argues, after some analysis of historical cases of discovery, that Baconian induction had been used in science very rarely, or not at all, although the situation has changed with the advent of a branch of AI called machine learning systems. I think that Gillies's line of argument can be generalized. Thanks to Machine Discovery Systems, philosophers of science have at their disposal a new tool for empirically testing their philosophical hypotheses: the measure of success or failure of philosophical conceptions about science is how well computer discovery systems that incorporate them in their heuristic principles perform in making scientific discoveries.

Accordingly, in the paper I make an attempt to answer which of the two philosophical conceptions of scientific method is better vindicated in view of the successes and failures of systems developed within three major research programs in the field: machine learning systems in the Turing tradition, normative theory of scientific discovery formulated by Herbert Simon's group, and the program called HHNT, proposed by J. Holland, K. Holyoak, R. Nisbett, and P. Thagard.

I agree with Donald Gillies that Baconian induction incorporating, to some extent, Popper's ideas of falsifying and rejecting hypotheses really did become part of scientific method. It is used in rules of inference of machine learning systems producing hitherto unknown scientific laws. These laws, however, are very low-level statistical rules describing specific phenomena and it can be questioned whether they deserve the name of full-fledged scientific laws.

In Simon's tradition, mechanical induction, contrary to the critics of that program, including Gillies himself, is used by systems that discover the hidden structure of matter or formulate complicated models of processes. Those systems use theory-poor methods which are quite distinct from high-level theoretical methods that were actually used by human discoverers in the field. Moreover, those systems generate models of the hidden micro-structure in purely mechanical manner, but then, in using heuristics to cut down on complexity by reducing the search as early as possible, they reject inadequate models in accord with Popper's methodology.

The HHNT program is still under development and, as yet, it lacks practical success in terms of working systems making quantitative and not only qualitative discoveries, but it aims at cognitive, conceptual analysis and computer implementations, using inductive methods, of extremely complicated processes involved in autonomous reasoning of a cognitive system making scientific discovery, also that of theoretical character.

Keywords: artificial intelligence, discovery systems, scientific method, inductivism

Tomasz Zarębski, Epistemological Status of Sense Data and Immediate Knowledge in the Philosophy of George Edward Moore

The paper explores two pivotal concepts of Moore's philosophy: sense data and immediate knowledge, examining their mutual relations. While the concept of sense data is commonly known and has often been extensively discussed, that of immediate knowledge is usually not explicitly mentioned. Nevertheless, Moore, in his arguments for the philosophy of common sense (e.g. in *A Defence of Common Sense* or *Proof of an External World*), often referred to examples of empirical knowledge that can be defined as immediate knowledge, i.e. knowledge acquired directly, not inferentially, and constituting a foundation for drawing all further conclusions concerning the empirical world, e.g. "Here is one hand". The opposite of it is mediate knowledge, which is always a result of inferring from statements expressing bits of immediate knowledge. Although the two terms in question rarely appear *explicite* in Moore, they are widely discussed in his lectures from 1910—1911, published only in 1953 as *Some Main Problems of Philosophy*. The present analysis refers mostly to this work.

It seems that the question of mutual relations between the concepts of sense data and of immediate knowledge constituted a serious problem for Moore. For sense data are the foundations of immediate empirical knowledge, while not being any knowledge themselves. At the same time, immediate knowledge, having to be based strictly on sense data, still has to comprise something more for it to be knowledge at all. In addition, due to Moore's assumption that immediate knowledge is not inferential, the shift from sense datum to empirical knowledge cannot be based on any inference. For only mediate knowledge can be a result of inferences.

The paper reveals main inconsistencies in Moore's understanding of immediate knowledge, presenting it as a complex epistemological item in which — contrary to the intentions of Moore himself — the crucial role is played by inference. Accordingly, in its conclusion, it shows that the considerations on epistemological, empirical immediacy put forward in *Some Main Problems of Philosophy* can be plausibly interpreted in favor of a broadly inferentialist stance: that immediate empirical knowledge does not exist, being a particular case of *the myth of the given*. It should be noticed that the analysis presented in the paper, although possibly consistent with Wittgenstein's well known critique of Moore (*On Certainty*), is mostly inspired by Sellars' essay *Empiricism and the Philosophy of Mind*.

Keywords: sense data, immediate knowledge, empiricism, philosophy of perception, observational reports, G. E. Moore

Tomasz Kąkol, Ingarden's Ontology of Time and Process and Presentism

Presentism is described as the theory according to which there is an objective time flow and that there is neither past nor future. Roman Ingarden's ontology of time does not seem to be presentist then, since it supposedly rejects the second component of that doctrine. In this article, I show that this view misconstrues the spirit of Ingarden's account, and I defend a certain ontology of time (inspired by Ingarden's works) against several objections (e.g. the 'how fast does time flow' question). Since becoming of a process (in the sense of its mode of existence) is just this process's time, I consider in turn several possible responses to the charge of an infinite regress leveled against Ingarden's ontology of process. If his original position is set aside, two extreme proposals will remain: the rebuttal of the objectual aspect of a process and giving up the categorial difference between objects enduring through time and processes (i.e. accepting perdurantism). While not discussing in detail the former one, I point out that the adequacy of perdurantism is an open question: in particular, reasons appealing to problems of material constitution, given by perdurantists, are unsatisfactory.

Keywords: Ingarden, ontology, perdurantism, presentism, process, time

Tadeusz Pabjan, Philosophical Ideas in Einstein's Physics and Cosmology

The present paper deals with the issue of some mutual dependencies between science and philosophy. It turns out that it is not possible easily to separate these two disciplines. All the great physical theories are entangled with notions and ideas which belong to the domain of philosophy. It is well known from the history of science that such notions and ideas very often were an important stimulus that pushed a scholar toward some strictly scientific problem and made him start working on a physical theory which would allow to solve this problem. This subject matter is presented in the article in the context of scientific as well as philosophical achievements of Albert Einstein. It is shown that some philosophical ideas considerably influenced the process of formation of his relativity theory and of his first cosmological model.

Special attention is paid to the so called Mach's Principle, which is a postulate concerning the relativity of mass, and to the idea of staticity of the universe which caused Einstein to change his field equations in such a way that they would produce a static model of the universe.

Keywords: Einstein, Mach's principle, static/dynamic universe

Mateusz Pencuła, Properties, Sets and Possible Worlds

The paper is devoted to the problem of the reduction of properties into sets of objects. It consists of three major parts. The first part deals with the conceptual framework where the notions of 'property' and 'set' are discussed. While the sets are taken straight from the mathematical set theory, properties and their relation to objects require much more complex description. The author adopts the Aristotelian approach based on an ontological relation of inherence.

In the second part, the existing views on the reduction in question are presented and reviewed. The central issue here is the one of the extensional equality of properties and sets. Most of the contemporary ideas on that matter point out that said equality between those two is impossible, thus the reduction cannot happen. Some of them try to omit the axiom of extensionality, but the author argues that those attempts are futile.

Finally, in the third part, an alternative way of dealing with the problem is presented, the one that leaves the principle of the extensional equality intact: the modal realism of David Lewis. While all other approaches are based on the idea of the single world, modal realism offers us a theory of possible worlds. The significance of Lewis' approach and his idea of reduction of properties into sets of objects are briefly discussed. Although the reduction within the possible worlds seems very plausible, the author of the paper points out certain difficulties, like its inability to explain necessarily coextensive properties. Despite the fact that modal realism offers us the way of reducing properties into sets in most cases, it still does not enable us to make the complete reduction. Though Lewis' theory seems fruitful, it is, in fact, futile with respect to the problem in question. Hence, the author argues that the answer to the question of reduction of properties into sets is negative, regardless of how many possible worlds will be taken into account.

Keywords: properties, sets, possible worlds, modal realism, set theory, extensional equality

Jerzy Pogonowski, Four Monographs by Roman Murawski

We review the four recent monographs by Roman Murawski:

Essays in the Philosophy and History of Logic and Mathematics, Amsterdam—New York: Rodopi, 2010. Series: *Poznań Studies in the Philosophy of the Sciences and the Humanities* 98. Preface: Jan Woleński. 343 pages. ISBN 978-90-420-3090-9, ISSN 0303-8157.

Logos and Máthēma. Studies in the Philosophy of Mathematics and History of Logic, Frankfurt am Main: Peter Lang, 2011. Series: *Polish Contemporary Philosophy and Philosophical Humanities* 1 (ed. Jan Hartman). 338 pages. ISBN 978-3-631-61804-2, ISSN 2191-1878.

Philosophie der Mathematik, with Thomas Bedürftig, Berlin—New York: Walter de Gruyter, 2010. 322 pages. ISBN 978-3-11-019093-9, e-ISBN 978-3-11-022060-5.

Filozofia matematyki i logiki w Polsce międzywojennej, Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, 2011. Series: *Monografie Fundacji na rzecz Nauki Polskiej*. 253 pages. ISBN 978-231-83-2670-6.

The first two of them are collections of Murawski's papers. The third is an original presentation of the main trends in the philosophy of mathematics, classical as well as most current. The last one discusses research in philosophy of logic and mathematics in Poland during the interwar period.

Keywords: Murawski, philosophy of mathematics

Roman Murawski, Proof in Mathematics — Today and Tomorrow

The paper is a review of the book by Krzysztof Wójtowicz, *O pojęciu dowodu w matematyce* [*On the Concept of Proof in Mathematics*]. It presents the main theses of the book and evaluates them.

Keywords: proof, formal proof, computer proof, hypercomputation

Mateusz Pencuła, An Introduction to the Analytical Metaphysics

The book Metaphysics by Tomasz Bigaj is intended to be an introduction to the basic issues of analytical metaphysics designed for non-philosophers. It fulfills its purpose to a large extent: the issues are competently presented in a clear and accessible way, even when referring to a very complex subjects. The unquestionable advantage of the book is also the fact that it indicates a strong relation between philosophical problems and those of other scientific disciplines, mainly physics and mathematics. It makes Bigaj's work an attractive handbook for the laymen as well as for professionals in other fields.

However, the author of the review points out that, while the ontological issues are dealt by Bigaj in a comprehensive manner, the same cannot be said about the problems in the field of philosophical anthropology which, after all, is also part of metaphysics. Apart from some brief remarks on identity and free will, the anthropological topics are not elaborated on. Omission of these issues mentioned is not justified, or at least not sufficiently substantiated in the process of dealing with metaphysical subjects.

Keywords: metaphysics, ontology, Bigaj, analytic philosophy