Abstracts

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Patryk Dziurosz-Serafinowicz, Common Cause Abduction: Its Scope and Limits

This article aims to analyze the scope and limits of *common cause abduction* which is a version of explanatory abduction based on Hans Reichenbach's Principle of the Common Cause. First, it is argued that common cause abduction can be regarded as a rational inferential mechanism that enables us to accept hypotheses that aim to account for the surprising correlations of events. Three arguments are presented in support of common cause abduction: the *argument from screening-off*, the *argument from likelihood*, and *the argument from simplicity*. Second, it is claimed, that common cause abduction is a defeasible reasoning, i.e., common cause abductive hypotheses are not always more plausible than separate cause abductive hypotheses. Finally, it is outlined what factors should be taken into account in order to use common cause abduction in a reasonable way.

Keywords: abduction, common cause, reasoning, likelihood, simplicity, bayesianism

Adam Andrzejewski, Anna Brożek, Substantial and Verbal Disputes

The main subject of the paper is to present the criteria which help us to establish whether a given ontological controversy (or even a whole dispute) is substantial or merely verbal. Metaphysics is often perceived as a discipline composed of endless disputes with no glimpse of hope for solution. This fact makes many philosophers claim that ontology is nothing more than matter of linguistic choice. In this paper, we argue that there exist certain methodological tools which enable us to establish whether particular ontological disagreement is substantial or merely verbal. However, as we emphasize, the scope of application of these tools is limited to strictly defined cases.

At first, we clarify the general background for an occurrence of ontological controversy.

Assume that a controversy occurs between the person A and the person B iff:

(a) A uses language L_A, and B uses language L_B (we do not decide what is the relation between those two languages and especially — if they are identical, or not);

(b) in both languages there is a sentence 'S'

(c) A accepts the sentence 'S' and person B rejects the sentence 'S'

(d) A aims at making person B accept the sentence 'S' and person B aims at making person A reject the sentence 'S'.

Having defined the above, we formulate and justify following definitions:

[SUBSTANTIAL CONTROVERSY] Suppose the conditions (a)-(d) occurred. If the controversy between A and B is substantial, then: there are two different sentences S_1 and S_2 of the language L, such that a translation of S from the language L_A into L is S_1 and the translation S from L_B into L is S_2.

[VERBAL CONTROVERSY] Suppose the conditions (a)-(d) occurred. If the controversy between A and B is verbal, then: there is a sentence S_3 of the language L that both the translation of S from the language L_A as well as the translation of S from the language L_B into L is S_3.

[SEEMINGLY SUBSTANTIAL CONTROVERSY] Suppose the conditions (a)-(d) occurred. A controversy between A and B is seemingly substantial when A and B are sure that the controversy between them is substantial but it is merely verbal.

In the above definitions, the concept of language L occurs. We assume that it is a *quasi*-universal language to which every sentence of L_A and every sentence of L_B may be translated. We focus on how to recognize the language L, scil., how to establish the rules of translation of an ontological term of L_A to another ontological term in L_B. The proposed idea is that such a *quasi*-universal language L may be (re-)constructed only if A and B share the same pragmatic and/or cognitive attitudes (they want to solve a considerably similar set of problems within theirs ontologies).

Then, it is highlighted how the presented conception of types of ontological controversies may be applied to the analysis of some ontological controversies, in particular, the debate between endurantism and perdurantism. The goal is achieved in two steps. Firstly, we use the required presuppositions of the language L in order to compare endurantism and perdurantism. Then, the following ontological concepts from these ontologies are discussed: „a thing of a common experience", „part" and „ontological sum". In consequence of the analysis, the serious affinity between endurantism and perdurantism is revealed. That is, the main differences between those ontologies are revealed as merely verbal. This fact is elicited by conceptual analysis which may be — to some extent — useful in process of defining whether (or not) some ontological disagreement is genuine or not.

Piotr Warzoszczak, The Later Carnap and Contemporary Metaphysical Debates. Part II, Was the Later Carnap a Proponent of Epistemicism?

In the paper I consider the prospects of interpreting late Carnap views on ontology as being in part a sort of epistemism. More precisely, I argue that the theses that he maintained in the *Empirism, Semantics, and Onotology* and the volume of *The Library of Living Philosophers* devoted to his philosophy put him close to proponents of epistemicism, according to which ontological debates over truth-values of metaphysical theses need not to be verbal disputes, but the prospects of resolving them are meager, since there are no evidences that could support either given metaphysical thesis or its negation. Most likely, Carnap should be read as a proponent of a more radical version of this view, since he maintained that *in principle* there are no such evidences. I find this view fit well with Carnap's argumentative strategy against substantial character of metaphysical debates, since he stresses the lack of evidences in favour of or against metaphysical claims as the main reason for his deflationism in ontology. However, what is the most worrisome in taking this route of interpreting late Carnap views on ontology is that among the presuppositions of epistemicism is the thesis that one can make sense of the talk about truth-values of metaphysical claims, whereas Carnap maintained they lack truth-values due to lack of cognitive contents. But taking the change of his view on the nature of semantic values in the volume of *The Library of Living Philosophers* devoted to his philosophy, where he claimed that extralinguistic entities should serve a role of semantic values and the notion of truth should be defined relatively to a given interpretation in a given model, I find his opinion on metaphysical claims unjustified, since one can define the the notion of truth for these claims relatively to models and hence make a talk about their truth values (relatively to models) sensible. It doesn't follow from that that one can also make a sense of a claim being absolutely true, since it would require to take one model to be special one in the sense that it fits the way reality is, which is something that the proponent of epistemicism deny on the ground that there are no evidences that could be taken to show that one of the models of a given language is special in this respect. I also discuss applications of the inference to the best explanation in argumentation in favour of various sorts of realism and argue that this kind of argumentation always leaves room for some ontological dispute between parties from which one deny the existence of entities that the other argued for through application of the inference to the best explanation and hence that no metaphysical debate can be resolved by application of the inference to the best explanation under the threat of circularity. The paper is the continuation of considerations made in my paper *The Later Carnap and Contemporary Metaphysical Debates. Part I*, in which I've argued that one can treat Carnap to be also a proponent of fictionalism. In effect, Carnap's deflationism in ontology seems to be a combination of fictionalism and epistemicism.

Keywords: ontology, metaontology, deflationism, Carnap, fictionalism, epistemicism

Iwo Zmyślony, Michael Polanyi's Idea of Tacit Premises of Science

Tacit premises of science constitute researcher's cognitive scheme, i.e. a set of *a priori* conditions of knowledge acquisition and application. Couple of assumptions make Polanyi's idea considerably different than Kantian or behavioural or structural interpretations of cognitive scheme. He sees it more in hermeneutical or habitual terms — as system of (a) skills (dispositions to act), which (b) defines the level of competence; (c) cannot be verbally articulated; (d) is embodied (and hence unaware); (e) innate or acquired through practice — in master-pupil relations; (f) undergoes constant modifications when applied; (g) conditions both theoretical actions (eg. categorisation, acts of assertion), as well as practical (manual skills, acts of perception).

The article contains analytical reconstruction of Polanyi's views originally dispersed throughout all his major works. First two points describe structure and functions of premises — expounded within context of his model of mind and key distinction between subsidiary and focal awareness. Third point analyzes their personal status, focusing on disproportion between their pure functional (habitual) status and linguistic description. Points fourth and five characterise diachronic and synchronic aspects of cognitive scheme as well as closely connected idea of master's authority and consensus within community of inquirers. Point six contains reconstruction of Polanyian idea of incommensurability and stability of cognitive schemes. Cognitive schemes outline the boundaries of scientific communities. Different schemes are mutually incommensurable in various degree.

Main thesis of this conception is following: premises function solely in tacit mode, i.e. in pure habitual (embodied; indwelled; incorporated) fashion. We derive their existence from „meaningful wholes", i.e. outcomes of our actions. Typical examples of such actions are *gestalt*-seeing and diagnosing, bike-riding, playing chess, problem-solving, operating in laboratory, uttering, understanding and asserting (or rejecting) of statements.

Structure of skilfully performed actions (both theoretical and practical) can be reconstructed in strictly verbalized, methodological directives („explicit rules"). No rule however can be applied automatically in all possible cases of experience. Hence application of all methodological directives requires always some tacit premises. Paradigmatic outcome of tacit premises are introspective *gestalt*-type appearances. According to Polanyi these personal, theory-laden phenomena, distinguish competent researcher from a laymen. Most of them are „intuitive", i.e. consist purely phenomenal and aesthetic content. Some of them contain additionally conceptual and propositional compounds which can be verbalised. Difference between the subjective „meaning" — i.e. a purely phenomenal, introspective content of *gestalt*-type perceptions, and „orthodox", linguistic meaning, conveyed by words, remains vital for understanding of whole Polanyi's epistemology.

Keywords: Michael Polanyi, personal knowledge, tacit knowledge; tacit knowing; tacit integration; embodied knowledge; habitual knowledge; procedural knowledge; non-propositional knowledge; know-how; competence; epistemic skills; tacit

premises; cognitive scheme; gestalt; gestalt perception; paradigm switch; pattern cognition; intuition; scientific intuition; insight; scientific insight; problem-solving; scientific method; hermeneutic circle; prejudice; epistemic externalism

Teresa Obolevitch, A Neo-Patristic Synthesis and Science

The article presents Fr. Georgy Florovsky's conception of a neo-patristic synthesis (developed by other orthodox theologians) and discusses some polemical aspects of this project. The neo-patristic synthesis is an approach to development of the patristic thought in the contemporary world and application it to the different branches of knowledge, including science. According to Florovsky science has an imperfect character, because to know the empirical world is possible only from the theological point of view. This position is shared by Alexei Nesteruk who claims that the patristic solutions can be treated as a model for the issues of relationship between science and religion. In this way a postulate of the methodological independency of science is breached. We show that this position is also is not accordance with the patristic thought because the Fathers of the Church were very open towards to the intellectual heritage of their time. Although they stressed that secular knowledge is inferior to theology, nevertheless this statement should be taken in the broad historical context of the defense of Christianity. Eastern Christian attitude to science is very sensitive for the transcendence and takes into account the anthropological dimension. In the conclusion we admit that these aspects of the patristic approach can be useful for the reflection about relationship between science and religion, under the condition that they will not break the principle of the methodological naturalism.

Keywords: neo-patristic synthesis, science, theology, Georgy Florovsky, Alexei Nesteruk

Jan Woleński, Naturalism and Genesis of Logic

This paper examines the problem of genesis of logic in the light of naturalism as a philosophical view about the nature of knowledge and reality. The main difficulty of naturalism as far as applied to logic consists in reconciling genetic empiricism (all cognition starts with experience) and abstract nature of logic. Anti-naturalism (Platonism, for example) maintains than empiricism is not able to explain how logical theorems as a priori assertions are accumulated. To defend naturalism one should note that experiential character of knowledge can be understood phylogenetically or ontogenetically. The former account is more suitable for naturalism and allows us to investigate genesis of logic by glasses of evolutionary theory. This way can be supplemented by an appeal to genetics. Both theories can explain how logical competence, that is ability to use deduction, arose in humans. The author claims that the structure of the genetic coded has some properties that became transformed into logical rule. Some analogies between consequence operation and topological closure are employed in analysis.

Keywords: consequence operation, evolution, genetics, deduction, genetic code

Zbigniew Semadeni, The Concept of Epistemic Deep Ideas and Individual Deep Ideas in Mathematics

The aim of this paper is to present a conception of *the triple nature of mathematics*. It is argued that the nature of mathematics is best served by distinguishing *deep ideas* (of concepts or propositions), their *surface representations* (signs which can be perceived by senses) and their *formal models* (in axiomatic theories). For instance, the concept „number π" has several different models in set theory (those based on Dedekind cuts and on Cantor's equivalence classes of Cauchy sequences) and yet all working mathematicians in the world have the same object π in mind. They have a common deep idea of π. Generally, the deep idea of a concept X is a well-formed mental construction of X which controls reasoning. It manifests itself in a characteristic, definite feeling of purpose, in firm certainty of the meaning of X in various contexts, and in robustness of understanding of X in cases of typical cognitive conflicts. *Epistemic deep ideas* are intersubjective and have been formed in phylogeny whereas *individual deep ideas* (or *deep intuitions*) are formed in ontogeny. In certain situations a deep idea may be described in terms of *intuition*, of *meaning* or *sense,* or of *understanding,* but none of these terms can provide a satisfactory description fitting all cases.

Deep ideas of certain concepts are identified in authoritative texts where the actual use of the concept formally, although unnoticeably, conflicts with the declared definition. Specific examples, discussed in the paper, include: *vertex of a straight angle*; switching the meaning of *fraction* from a single number to a pair numerator-denominator; identifying *vector* with *point* and with *translation*. A peculiar anomaly is known in axiomatic set theory. The standard definitions are: an ordered pair is $(a_1,a_2)=\{\{a_1\}, \{a_1,a_2\}\}$; a function $f : X{\rightarrow}Y$ is a set of pairs; a sequence $(a_1,\dots,a_n)$ is a function on the set $\{1,\dots,n\}$; an ordered pair is the same as a two-term sequence (a_1,a_2), which is different from $\{\{a_1\}, \{a_1,a_2\}\}$. This is an unavoidable definitional loop; however, it does not affect reasoning, for mathematicians use the deep idea of a pair, and not the definition.

An example is given to show that two geometric phrases with analogous surface grammatical structures (with adjectives linked by „and") may be interpreted differently (as the union or the intersection of the relevant sets), depending on their deep linguistic structures.

The transitional mechanisms in the history of science and psychological development described by J. Piaget and R. Garcia, in particular those leading from the *intra* level (object analysis), to the *inter* level (analysing relations or transformations), and then to the *trans* level (building structures), may be used to outline the formation processes of epistemic deep ideas and those of individual ones; in each progression what gets surpassed is always integrated with the new (transcending) structure. Metaphorically, the deep idea of a concept is built on layers of earlier constructions and meanings.

Keywords: mathematics, epistemic deep ideas, individual deep ideas

Izabela Bondecka-Krzykowska, Remarks on Ontology of Virtual Reality

The article is an attempt at collecting some views on ontology of virtual reality (VR). Two types of definitions of virtual reality are discussed and compared: technological (concentrated on technical features of VR) and psychological (concentrated on people's experiences with VR). In the paper features of virtual reality such as: interaction, artificiality, simulation, full body immersion, networked communications, telepresence and immersion are presented as forming *differentia specifica* of virtual reality. The main studied issues are ontological problems connected with virtual reality especially ontological status of virtual objects. The main views on this subject are presented: 1) virtual objects are simulations of real objects, 2) some virtual object are as real as their equivalents in the reality (conception of Philip Brey based on Searle's social ontology), 3) virtual worlds as constructions of human mind. Virtual reality shades new light on some classical philosophical problems. In the paper two of them are discussed: 1) distinction between reality and appearances and 2) relations of the real world to a virtual one.

Keywords: virtual reality, virtual words, ontology of VR, virtual objects, simulation