
Abstracts

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Piotr Bryczyński, Aiming at Truth. Part II

In scientific practice theories are allowed to posit objects believed to be fictitious. Some philosophers undermine the legitimacy of scientific practice in this respect, which leads to a philosophical problem. Various solutions have been advanced. The paper argues for a certain version of fictionalism. Since the objections against positing fiction are objections against the practical wisdom of science and are neither compelling nor easily answerable, it is suggested in the paper that if there is a way out, it is mainly a way of revealing hidden motivations by looking anew at the scientific practice from the historical perspective, one of the hopes being that it will enable us to reveal some hidden burdens of history. This suggestion determines the main line of argumentation.

Keywords: aims of science, truth, explanation, representation, fiction, belief imitation

Paweł Grabarczyk, On a Non-Arbitrary Criterion of Having a Computational Structure

In the paper I defend the view that having a computational structure (which I understand as a property enabling the object to realize computations) is an empirically detectable feature of selected objects which is not observer relative. I start by presenting a naïve definition of realization of computation and show how it leads to pancomputationalism. Then I test existing strategies of dealing with this unwanted conclusion and show why they are not satisfactory for my aim. The main reason for this is that some of the notions these solutions use (for example notions of “mechanism” and “causality”) can be easily exploited by the skeptic. In the remaining part of the paper I present a candidate for a non-arbitrary criterion of having a computational structure and deal with some obvious objections to it. I propose to

treat the mapping of physical states of a given object to an algorithm as a task of translating between two languages used for physical and formal descriptions respectively. The object can be said to contain a computational structure when it is possible to create a *closed* and *effective* translation manual between its physical states and states of any possible computation. The translation manual is *closed* when it either contains every expression of the translated language or rules for obtaining every expression of the translated language. It is *effective* when it is shorter than the sum of all expressions it helps to translate.

Keywords: pan-computationalism, arbitrariness, computational theory, computations in physical systems

Pawel Gładziejewski, Representationalism and Mechanistic Explanation in Cognitive Science

There is a growing consensus that explanation in cognitive science is a form of mechanistic explanation. According to this view, explaining a cognitive capacity of a system consists in describing a mechanism responsible for it, where a mechanism is understood as a collection of appropriately organized, functionally specified, interacting components. The article employs a mechanistic view on cognitive scientific explanation in order to discuss the problem of the status of mental representations as explanatory posits invoked by cognitive scientists. The article argues that mechanistic outlook on the problem of mental representations enables one to formulate explicit conditions that need to be fulfilled in order for a given explanation to be legitimately representational. Furthermore, the article develops the thesis that there is (at least) one notion of mental representation that meets these conditions. This notion is based on understanding mental representations as internal models or simulations, where representing is based on structural resemblance relation holding between the vehicle of representation and what is represented.

Keywords: representationalism, representation, mental representation, mental simulation, s-representation, explanation, mechanistic explanation, explanation in cognitive science

Krzysztof Poslajko, Who Should Fear Type Epiphenomenalism?

The causal exclusion argument purports to show that various forms of nonreductive physicalism in philosophy of mind (including especially Davidson's anomalous monism) inevitably lead to type epiphenomenalism, i.e. the view that mental properties are causally ineffective. In a recent paper, Mariusz Grygianiec claimed that a proponent of Davidson's theory, as a nominalist, should be unmoved by considerations of that sort. The aim of this paper is to analyze this claim. It turns out that, given certain assumptions, both nominalist's and realist's position can be threatened by this charge, but the nominalist is better equipped to resist it.

Keywords: philosophy of mind, epiphenomenalism, nominalism, causal exclusion

Piotr Błaszczyk, Kazimierz Mrówka, Euclid and Aristotle about Continuity. Part I. Euclid

Line segment is a kind of ancient Greek μέγεθος. It is described mathematically in Euclid's *Elements* and in a philosophical way in Aristotle's *Physics*. In this first part of our paper we present Euclid's twofold attitude toward a line segment: the first one developed in his theory of proportion of magnitudes (book V), the second in his plain geometry (books I-IV). Euclid's magnitudes are of several different kinds: lines segments, triangles, convex polygons, arcs, angles. Magnitudes of the same kind can be added to one another and compared as greater–lesser. We provide a set of axioms for the line segments system $(M, +, <)$ and show that the total order of segments $<$ is compatible with the addition operation $+$. The positive part of an Archimedean field is a model of these axioms. Next, we present an interpretation of Euclid's proposition I.10 and show that Aristotle's famous saying „everything continuous is divisible into divisibles that are infinitely divisible” applies to a single line segment. Our study is based on Heiberg's *Euclidis Elementa*.

Keywords: Euclid, Aristotle, Cantor, continuity, magnitude, real numbers, segment, structure of segments

Jerzy Golosz, How We Cannot Understand the Debate between Absolutism and Relationism

In the context of the essay of Mariusz Grygianiec *Persistence through time (Trwanie w czasie)*, the paper discusses the question of how we can, and how we should not, understand the classical controversy between absolute and relational theories of space and time in both versions: ontological and related to the problem of motion. We cannot understand the controversy in the ontological version as a controversy concerning the problem whether there are, or maybe there are not, empty regions of spacetime but rather as a disagreement over the problem whether spacetime and the material world exist in the same way (ontologically on a par). Additionally, we should distinguish two different metaphysical positions denying substantivalism (the view treating spacetime as a substance): the *property view*, according to which spacetime points should be interpreted as properties of location of objects, and *relationism* assuming that all spatiotemporal predications are relational. The debate between the absolute and relational conceptions of motion should be treated as a debate over the problem whether each motion of bodies is relative to other bodies or rather takes place relative to a spacetime structure which cannot be determined by the distribution of mass in the Universe.

Keywords: substantivalism, absolutism, relationism, absolutistic conception of motion, relationist conception of motion

Mariusz Grygianiec, The Problem of Understanding of the Absolutism/Relationism Debate

The text presents a response to Gołosz's critique of my reconstruction of the absolutism/relationism debate, set out in the article *Trwanie w czasie (Persistence through Time)*. I specify the objections I agree with and those about which I remain sceptical. I suggest that the main source of the controversy between Gołosz and me is, on the one hand, the traditional and somewhat schematic way of presentation – on my part – of the positions in the dispute (dictated in part by the subject matter of the discussed article), and on the other hand, a persistent lack of a suitable, exhaustive analysis of the notion of ontological dependence which lies at the heart of the debate.

Keywords: Gołosz, absolutism, relationism, time, ontological dependence