

РЕЗЮМЕТА на публикации по конкурс за даване на академичната длъжност доцент за
нуждите на секция “Онтология и епистемология”

1. Резюме на хабилитационен труд на Гл. Ас. Борис Грозданов на тема A PRIORI
REVISABILITY IN SCIENCE

**Grozdanoff, B. [2012] “A priori Revisability”, Idea. ISBN 978-954-8638-57-9. In English, под
печат.**

ABSTRACT

The most influential rationalist model of scientific knowledge is the three-layered model formulated recently by Michael Friedman. At its surface are the empirical laws of nature, such as Newtonian law of gravitation or Einstein’s equations for gravitational field. At its deeper second level are the fundamental principles of science that determine the general spatiotemporal framework which enables the formulation and the testing of the empirical laws. At the third level are the philosophical meta-paradigms which guide the transition between scientific paradigms. The central epistemic claim of the model concerns the character of the fundamental principles; according to Friedman they are a priori, that is, they are independent from experience. Yet he is explicit that the principles change under empirical pressure. Friedman’s position, however, faces the modern empiricist challenge instead of evading it: he has to explain how the principles could still be a priori if they change under empirical pressure. I argue that his defence, appealing to the old Reichenbachian notion of the constitutive a priori, is inconclusive. The present text provides a contemporary account of the epistemic character of the principles addressing the most recent work on the a priori. I argue that at least some principles within natural science are not empirically but a priori revisable, and in this way I respond to the empiricist challenge. In order to build the defence I formulate a general notion of epistemic revisability and I extract from it two corresponding kinds of specific revisabilities: a traditional empirical one and the suggested a priori revisability within natural science. I argue that the latter kind is as vital as the former and that it is also capable of meeting the argument from empirical revisability by providing an epistemic alternative of it. In this way, if some second level principles are shown to evolve through a priori revisions the leading empiricist argument fails. To demonstrate this I analyze two case studies, one from history of geometry and one from history of physics, and I show that the revisions were epistemically a priori and not empirical. The result is a two-fold one. First, a genuine alternative of empirical revisability is developed, and not just for a priori domains like mathematics but for the natural sciences. Second, a new mechanism for the dynamics of science is suggested, namely that scientific knowledge sometimes evolves through empirically independent moves. At the end, these enable a modern epistemic defence of the priori character of the second level principles in Friedman’s model and thus help to keep its vitality.

2. Резюмета на **допълнителни** статии към конкурса (илюстриращи академични постижения):

Grozdanoff, Boris [2010] "Fregean one-to-one correspondence and numbers as object properties" in *Principia*, Vol. 13, N. 3. ISSN 1414-4247. Special Issue in honour of Newton Da Costa, in English.

ABSTRACT

The paper critically examines an unpopular line of Frege's view on numbers in the Foundations of Arithmetic. According to this view, which analyzes numbers in terms of properties and not in terms of extensions, numbers are properties of concepts vs. Properties of objects. The latter view is held by Mill and is famously criticized in the Foundations. I argue that on the property account numbers cannot only be properties of concepts but they also have to be properties of objects. My main argument rests on purely metaphysical grounds. It stems from the motivation that were numbers only properties of concepts we would not have been able to explain mathematical truths about the physical world or those truths would have been miraculous. On pains that we do have mathematical truths about the physical world that are not miraculous we cannot agree with Frege's property line about the metaphysical nature of numbers.

Grozdanoff, Boris [2012] "Homogenous Semantics" in Gurova and Hvorecki (eds.), Cambridge Scholars Publishing, Cambridge, in English, forthcoming.

ABSTRACT

In one of the most influential papers from the second part of the 20th century Paul Benacerraf argues, among other things, that the semantics for mathematical propositions must parallel semantics for the rest of the language. He dismisses with the Fregean notion of "sense" and takes the Tarskian referential notion of truth to be the leading candidate for building a common semantics. The underlying consideration behind all this is the strive for what he calls "homogenous semantics". Such a semantics is supposed to regulate the truth conditions for all types of linguistic cases. In the paper I discuss the homogeneity requirement and I critically explicate the intuitions behind it.

Grozdanoff, Boris [2007] "Reconstruction, Justification and Incompatibility in Norton's account on thought experiments" in *The Croatian Journal of Philosophy*, Vol. VII, No. 19, 2007 pp. 67 – 77. ISSN 1333 – 1108, in English.

ABSTRACT

In one of the most influential empiricist accounts on the epistemic nature of thought experiments John Norton proposes a challenge: that no thought experiment in science could be found that cannot be logically reconstructed as an argument. Norton's account has two main theses, the *epistemic thesis* that all information about the physical world, delivered through a thought experiment, comes solely from experience and the *reconstruction thesis* that all thought experiments could be reconstructed as arguments. In the paper I argue that in at least some cases Norton's theses are incompatible with each other and therefore their combination could not form a reliable account. I show that sometimes the available experience could not justify the conclusion of a thought experiment and that sometimes it even contradicts it. I suggest an analysis of Einstein's *Train Thought Experiment* as a counterexample to the challenge.