
Submitted Summaries

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Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

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Marek Szydłowski, Research Programme of Quantum Cosmology

Modern approaches and attempts towards construction of quantum gravity theory and quantum cosmology are reconstructed in terms of Lakatos conception of scientific program and its protective belt. The positive and negative heuristic is investigated in the context of quantum cosmology in Hartle-Hawking and Vilenkin approaches. We demonstrate that while the program of quantum cosmology is empirically degenerated, it becomes heuristically progressive. We pointed out the role of Ambjorn, Loll and Jurkiewicz's hypothesis of quantum dynamical triangulation, which justifies the conception of postponed rationality rather than conception of instant rationality. We argue that the field of quantum gravity may be useful for incorporating some new ideas into the conceptions of philosophy of science.

Key words: quantum cosmology, hypothesis of quantum dynamical triangulation, Lakatos, scientific research programmes

Elżbieta Łukasiewicz, Is language a perfectly designed system? — on the principle of economy in language structure and the premises of Minimalist Program

The aim of the paper is to consider the notions of economy, redundancy and optimality, with regard to language structure and its functioning in time and with regard to certain principles of the Universal Grammar. I argue that the notion of optimality needs not to be congruent with economy, and at odds with redundancy. On the contrary, if we hold realistic premises regarding the ontology of language (as Chomsky does) and think of language as a natural system existing in time, then we should expect similar principles of organization in language as in other natural systems (cf. system theories: von Bertalanffy, Laszlo, Kauffman). In that approach, connecting optimality with economy is untenable. That stance is contrary to Chomsky's Mini-

malist Program, in which economy has become the actual principle of the Universal Grammar. I discuss a major inconsistency in Chomsky's assumptions about the nature of the language faculty and trace its possible origin.

Key words: language system; language faculty; systems theory; economy principle; redundancy; optimality; edge-of-chaos theory; Minimalist Program

Katarzyna Paprzycka, On a certain fallacy, or what Lewis Carroll's paradox has in common with Hume's problem

The paper is a warning against an unreserved use of reasoning, which is designed to show that a premise in an argument is missing. The reasoning is susceptible to a common equivocation. As a result, it can be systematically misleading, making us judge that certain premises are missing where they are not. It is argued that the equivocation in question lies at the bottom of Lewis Carroll's paradox, a version of Hume's problem as well as some arguments in philosophy of mind and ethics. The paper is first and foremost a warning because it turns out that there is some didactic value in playing on the equivocation.

Key words: enthymeme, Hume's problem, Lewis Carroll's paradox

Anna Rykowska, Four variants of indeterminacy thesis

The objective of the article is to identify different formulations of indeterminacy thesis and various trials of dealing with it. Indeterminacy thesis was first identified by Quine as a consequence of his theory of meaning. According to the thesis, although we can determine the kind of facts or events of the world, which a particular observation sentence type refers to, we are not able to determine the referents of words the sentence consists of. And that is because of the fact that on the basis of data we normally possess in the process of interpretation we can construct indefinitely many equally good translations manuals (due to any one of them a reference of a particular word type can be something different than due to any other). In the article four variants of indeterminacy thesis will be identified and the relations between them will be showed. The resulting thesis will be that if we do not want to accept *ad hoc* and improbable semantic assumptions that at the start undermine the indeterminacy thesis, we should reduce three first variants of the thesis to the fourth one. The last one, however, is such that essentially seems to resist virtually any argument against indeterminacy thesis (granting the general assumptions of semantic theories of which it is a consequence).

Key words: Quine's theory of meaning, indeterminacy thesis, inscrutability of reference, ontological relativity

Eugeniusz Żabski, The note about the paradox of Theseus' boat and about genidentity

In this article the author solves the paradox of Theseus' boat. He gives also the axiomatic definition of genidentity.

Key words: paradox of Theseus boat, genidentity

Witold Strawiński, On Quantum Non-locality and Possible Worlds. Critical Remarks

In 2006 Tomasz F. Bigaj published in English a book „Non-locality and the Possible Worlds. A Counterfactual Perspective on Quantum Entanglement”. He considered the question whether a satisfactory interpretation of quantum mechanics in the standard form should include the assumption of a non-local, immediate influence of one part of a specific quantum system (like two electrons in the singlet state) on the other, spatially separated part of that system. Bigaj — following H. Stapp — chooses as conceptual instruments of his analysis counterfactual conditional statements and possible-worlds semantics of such statements. After thorough examination of different Stapp’s arguments, he reaches the conclusion „that no matter what available interpretation of counterfactuals we decide to follow, there is no need in standard quantum mechanics for measurement-included non-locality”.

My critique concerns mainly Bigaj’s selection of conceptual tools: the counterfactuals and possible-worlds semantics. I point to the fact that such selection assumes the „necessitarian” interpretation of laws of nature in the domain of micro-objects (e.g. for systems like two electrons in the singlet state). The different, „regularist” interpretation of physical laws in that domain is possible as well, and counterfactual arguments are not valid for such interpretation.

Key words: Bell’s theorem, counterfactuals, EPR argument, quantum entanglement, non-locality, possible worlds

Tomasz Bigaj, The quantum world in the counterfactual perspective: a reply to Witold Strawiński

This is a response to a critical review of my book *Non-locality and Possible Worlds* (Ontos Verlag, Frankfurt 2006) by Witold Strawiński. I present arguments why counterfactual conditionals are needed in the description of quantum-mechanical phenomena, and in particular in the analysis of the condition of locality. I rebut arguments against my choice of the relation of similarity between possible worlds offered by W. Strawiński and M. Dickson. In the later part of the article I address some other issues raised by my critics, such as the problem of the truth value of the antecedents of true counterfactuals, the problem of the semantic relation between sentences and events, and various shortcomings of my formulations of the condition of locality. In my response to the specific criticism of the definition of free-choice events, I agree with the charge that my definition is satisfied by all actual events. I present a correction to the definition which uses the distinction between actual events and merely possible events.

Key words: Quantum Mechanics, non-locality, counterfactual conditionals, possible worlds, similarity relation