

Selected Bibliography on Existence and Predication

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BIBLIOGRAPHY

1. Angelelli Ignacio. Predication theory: classical vs modern. In *Relations and Predicates*. Edited by Hochberg Herbert and Mulligan Kevin. Frankfurt: Ontos Verlag 2004. pp. 55-80
 "This essay aims, first, at describing the conflict between the theory of predication (classical, Aristotelian) prevailing in philosophy until the end of the 19th century, and the theory arisen with the new logic (modern, Fregean). Three features characterize the pre- Fregean period: 1) conflation of predication and subordination (extensionally: membership and class-inclusion), 2) conflation of identity and predication, 3) the view of quantificational phrases (e.g. "some men") as denoting phrases. A possible fourth feature is suggested by the consideration of the so-called Locke's "general triangle". Most of the paper is devoted to the first feature, also called the "principal" one, stated by Aristotle. Frege seems to be the first, in 1884, to reject the first feature; he E ISO rejected, not less vehemently, the second and the third features. Fregean predication theory became standard, and just taken for granted in the subsequent developments of logic as well as in the mainstream of philosophy. The second aim of this paper is to evaluate- relative to the notion of predication submitted in section I - the conflict between the two traditions, and to determine if both are somehow right, or one is right and the other wrong. The main result is that the Fregean revolution in predication theory is, at least with regard to the first and second features of the classical view, a clarification that would probably be welcomed by the classical authors themselves (*pace* Hintikka's "logic of being")."
2. Brown Lesley. The verb 'to be' in Greek philosophy: some remarks. In *Language*. Edited by Everson

Stephen. Cambridge: Cambridge University Press 1994. pp. 212-236

"I examine key uses of 'to be' in Parmenides, Plato (especially *Republic V* and *Sophist*) and Aristotle. I argue against imposing modern distinctions (into predicative, existential or identity uses) on to the texts, showing that while Greek uses of *einai* may be partitioned into syntactically complete and incomplete (noted by Aristotle and perhaps at *Sophist* 255cd) the distinction was neither clear-cut nor perceived as philosophically important. I examine how these authors treated the inference from 'X is F' to 'X is' (compare that from 'X teaches French' to 'X teaches') and, more problematically (as Plato *Sophist* saw, correcting Parmenides and *Republic V*) from 'X is not F' to 'X is not'."

3. Dancy Russell M., "Aristotle and existence," *Synthese* 54: 409-442 (1983).

Reprinted in: S. Knuuttila, J. Hintikka (eds.) - *The logic of being* - Dordrecht, Reidel, 1986, pp. 49-80.

"Greek knows no distinction between the copulative and predicative-existential sense of to he' (*einai*). The existential sense is, nevertheless, conveyed in propositions in which the verb to be is not followed by any predicate. Dancy argues that, for A., such propositions derive from an incomplete predication, with the rider that the predication in question is essential. Existing is indeed the same as being something, but, the 'something' that is omitted can only be the 'what it is to be a thing'. Overall, A. seems to identify the copulative use with being in the accidental sense (*kata sumbebekos*) and the predicative with being in virtue of itself (*kath auto*)."

4. Dancy Russell M., "The Categories of Being in Plato's *Sophist* 255c-e," *Ancient Philosophy* 19: 45-72 (1999).

"*Sophist* 255c-e contains a division of beings into two categories rather than a distinction between the "is" of identity, existence, and/or predication; this emerges from an analysis of the argument that employs the division. The resulting division is the same as that ascribed to Plato in the indirect tradition among the so-called "unwritten doctrines"; there the two categories are attached to the One and the Indefinite Dyad."

5. Dancy Russell M. Hintikka, Aristotle, and existence. In *The philosophy of Jaakko Hintikka*. Edited by Auxier Randall E. and Hahn Lewis E. Chicago: Open Court 2006. pp. 311-328

"Jaakko Hintikka has, over the years, made a number of large contributions to our understanding of ancient Greek philosophy: he has discussed Parmenides, Plato, and, most extensively, Aristotle. I shall here focus on his Aristotle. So far, though, that is not much of a focus, for Hintikka has written about a large variety of topics in Aristotle, such as: time, modality, induction, dialectic, methodology in general, theory of science, philosophy of mind, categories, and being and existence. I shall focus on the I sui.se topics, being and existence. (...)

I begin with an area of what is, on the face of it, agreement. First, we both reject a claim Hintikka refers to as "the alleged ambiguity of 'is'" or the "Frege Trichotomy." Let us simply call it "the Trichotomy." Second, we both hold that Aristotle did not accept the Trichotomy either. Our failure to reach complete agreement has to do with what Aristotle does accept.

Consider these points one by one. In taking up the first one, considerations that have a bearing on Aristotle's Greek will come in, but most of those will be shelved until we take up the second." pp. 311-312.

6. Dejnozka Jan. *The ontology of the Analytic tradition and its origins. Realism and identity in Frege, Russell, Wittgenstein, and Quine*. Lanham: Littlefiels Adams Books 1996.

Paperback edition reprinted with corrections, 2002; reprinted with further corrections, 2003.

See Chapter 6.3: *The meanings of "Is": Aristotle, Frege, Russell* pp. 227-231.

7. Englebretsen George, "A note on predication," *Dialogue* 19: 627-628 (1980).

Reply to: Nicholas Griffin - *Do we need predication?* - *Dialogue*, 16, 1977, pp. 653-663.

8. Floyd Juliet. On the use and abuse of logic in philosophy: Kant, Frege and Hintikka on the verb 'to be'. In *The philosophy of Jaakko Hintikka*. Edited by Auxier Randall E. and Hahn Lewis E. Chicago: Open Court 2006. pp. 137-188

"Jaakko Hintikka is a radical and wildly ambitious philosopher. Over the course of more than forty years he has attempted to refashion the whole of logic and philosophy in his own image, urging the overthrow of most everything analytic philosophy inherited from Frege and Russell. He argues that

the correct philosophical Logic (with a capital "L" to designate "the real Logic") is his "independence-friendly" logic, wedded to his construals of modal and epistemic logic in the context of game-theoretic semantics, and he calls for a reappraisal of every philosophical problem in light of this conception. Hintikka thereby rejects what became for philosophers (after Hilbert, Gödel, and Quine) the standard answer to the question, What is Logic?, viz., first-order logic, unmoved by its commonly supposed advantages: topic-neutrality, wide curricular, mathematical, and philosophical acceptance, general (if not universal) applicability, recursively axiomatizable completeness with respect to deductive validity, and classical syntax and semantics for negation. He is not swayed either by the expressive power of second-order logic. He wants a system that is, expressively speaking, somewhere in between. To understand him as a philosopher is to be able to fathom why. It is not the aim of this essay to come fully to grips with Hintikka's persistent campaign to overthrow the present order of things. Instead, I shall try to characterize his self-conception in broad brushstrokes. Section 1 of the essay aims to situate Hintikka's thought within the context of recent analytic philosophy. Section 2 canvasses his criticisms of Frege's and Russell's fundamental logical notions. Section 3 assesses his treatment of the classical Ontological Argument for God's existence in light of these criticisms. First, I contrast his treatment of the argument with that of Michael Dummett. Next, I consider what Hintikka has left out of philosophical account in his particular reconstruction of the argument, suggesting that it is precisely this which is most telling with respect to his own philosophy. In section 4 I delve into a more detailed analysis of Hintikka's treatment of Kant's philosophy of logic, with the aim of showing how his own philosophical preconceptions shape his historical readings." pp. 137-138.

9. Frede Michael. *Prädikation und Existenzaussage. Platons Gebrauch von '...ist' und '...ist nicht...' in Sophistes*. Göttingen: Vandenhoeck & Ruprecht 1967.
10. Griffin Nicholas, "Do we need predication?," *Dialogue. Canadian Philosophical Review* 16: 653-663 (1977).
 "The paper is concerned with the standard distinction between the 'is' of identity and the 'is' of predication. It deals, in particular with attempts by Fred Sommers ("Journal of Philosophy", 1969) and Michael Lockwood ("Philosophical Review", 1975) to show that the distinction is ill-founded since identity statements are predications of singular terms. This proposal is criticized mainly on the grounds that the notion of a singular term depends upon identity and thus can't be used in a program to eliminate identity. An alternative means of removing the distinction between the 'is' of identity and the 'is' of predication, by eliminating predication in favour of relative identities using Geach's suggestion that "x" is "F" is equivalent to "x" is the same "F" as something, is briefly sketched."
11. Haaparanta Leila. *Frege's doctrine of Being*. Helsinki: Acta Philosophica Fennica 1985.
12. Haaparanta Leila. Frege on existence. In *Frege Synthesized*. Edited by Haaparanta Leila and Hintikka Jaakko. Dordrecht: Reidel 1986. pp. 155-174
 From the General Introduction by Leila Haaparanta and Jaakko Hintikka: "In her article 'Frege on Existence' Leila Haaparanta emphasizes that Frege's greatest insight was the idea of first-order language, which, to a large extent, motivated the rest of his innovations. Haaparanta focuses her attention on Frege's concept of existence, which receives special attention in Frege's thought in connection with the thesis concerning the ambiguity of such words for being as the English 'is'. The ambiguity thesis was an important part of the Fregean paradigm of first-order logic. Haaparanta argues that Frege does not only assume the word 'is' to be ambiguous but that he considers 'exists', or the 'is' of existence, to be an equivocal word. She suggests that the equivocality view has a metaphysical and epistemological background in Frege's thought. Her paper thus pushes a great deal further the suggestions of Jaakko Hintikka mentioned earlier in this Introduction." p. 6
13. Hintikka Jaakko, "Is, semantical games, and semantical relativity," *Journal of Philosophical Logic* 8: 433-468 (1979).
 Reprinted in: Esa Saarinen (ed.) - *Game theoretical semantics* - Dordrecht, Reidel, pp. 161-200 and in: J. Hintikka - *Paradigms for language theory and other essays* - Dordrecht, Kluwer, 1998 pp. 71-106.

"Frege and Russell (followed by most subsequent logicians, philosophers, and linguists) claimed that "is" is ambiguous between identity, existence, predication, and general implication. It is shown that

no such ambiguity can be present in Hintikka's game-theoretical semantics. This shows that central semantical notions (e.g., ambiguity) can be relative to the underlying semantical (logical) framework. The resulting "semantical relativity" has several important implications for the methodology of linguistics, telling, e.g., against all reliance on semantical intuitions or on "the language of thought." It is also anachronistic to project the Frege-Russell ambiguity to most pre-Fregean logicians and philosophers."

14. Hintikka Jaakko, "Kant on existence, predication, and the ontological argument," *Dialectica* 35: 128-146 (1981).
Reprinted in: Simo Knuuttila and J. Hintikka (eds.) - *The logic of Being* - Dordrecht, Reidel 1986 pp. 249-268.

"The ontological argument fails because of an operator order switch between (1) "necessarily there is an (existentially) perfect being" and (2) "there is a being which necessarily is (existentially) perfect". Here (1) is trivially true logically but (2) is problematic. Since Kant's criticisms were directed at the notion of existence, not at the step from (1) to (2), they are misplaced. They are also wrong, because existence can be a predicate. Moreover, Kant did not anticipate Frege's claim that "is" ("ist") is ambiguous between existence, predication, identity, and class-inclusion. To restore the ontological argument, an extra premise is needed to the effect (roughly) that it is known who the existentially perfect being is. The question is raised whether Kant could have meant the failure of this extra premise by his thesis that existence is not a "real" predicate."

15. Hintikka Jaakko, "Semantical games, the alleged ambiguity of 'is' and Aristotelian categories," *Synthese* 54: 443-468 (1983).
Reprinted with the title: *Semantical games and Aristotelian categories* in: J. Hintikka, Jack Kulas - *The game of language: studies in game-theoretical semantics and its applications* - Dordrecht, Reidel, 1983 pp. 1-32 and in: J. Hintikka - *Analyses of Aristotle* - Dordrecht, Springer, 2004 pp. 23-44.
16. Hintikka Jaakko. The varieties of Being in Aristotle. In *The logic of Being*. Edited by Knuuttila Simo and Hintikka Jaakko. Dordrecht: Reidel 1986. pp. 81-114
17. Hintikka Jaakko, "On Aristotle's notion of existence," *Review of Metaphysics* 52: 779-805 (1999).
Reprinted in: J. Hintikka - *Analyses of Aristotle* - Dordrecht, Springer, 2004 pp. 1-22.
18. Hintikka Jaakko and Halonen Ilpo, "Aristotelian explanations," *Studies in History and Philosophy of Science* 31: 125-136 (2000).
Reprinted in: J. Hintikka - *Analyses of Aristotle* - Dordrecht, Springer 2004 pp. 127-138.

"Aristotle did not consider the Frege-Russell distinction between the "is"s of identity, existence and predication as an ambiguity. On each occasion, any of these component senses of "einai" might or might not be present. The existential sense (existential force) was in a Barbara-type syllogism conveyed from the major term to the minor term by the middle term. For this reason the middle term was the proximate cause of the minor one: it is what lent the minor one its existence. Likewise Aristotle had to assume existential force only for the widest (generic) term of each science."

19. Hintikka Jaakko. On the different identities of identity: a historical and critical essay. In *Philosophical problems today. Vol. 2: Language, meaning, interpretation*. Edited by Fløistad Guttorm. Dordrecht: Springer 2005. pp. 117-140
20. Hintikka Jaakko and Vilkkio Risto, "Existence and predication from Aristotle to Frege," *Philosophy and Phenomenological Research* 73: 359-377 (2006).

"One of the characteristic features of contemporary logic is that it incorporates the Frege-Russell thesis according to which verbs for being are multiply ambiguous. This thesis was not accepted before the nineteenth century. In Aristotle existence could not serve alone as a predicate term. However, it could be a part of the force of the predicate term, depending on the context. For Kant existence could not even be a part of the force of the predicate term. Hence, after Kant, existence was left homeless. It found a home in the algebra of logic in which the operators corresponding to universal and particular judgments were treated as duals, and universal judgments were taken to be relative to some universe of discourse. Because of the duality, existential quantifier expressions came to express existence. The orphaned notion of existence thus found a new home in the

existential quantifier."

21. Hintikka Jaakko and Vilkkio Risto. Kant's influence on the development of modern logic. In *Kant Today / Kant aujourd'hui / Kant heute*. Edited by Lenk Hans and Wiehl Rainer. 2006. pp. 112-126
Proceedings of the *Institute International de Philosophie* Conference, Karlsruhe-Heidelberg, 2004
22. Kahn Charles H. *The verb 'be' in ancient Greek*. Dordrecht: Reidel 1973.
Volume 6 of: John W. M. Verhaar (ed.) - *The verb 'be' and its synonyms: philosophical and grammatical studies* - Dordrecht, Reidel
Reprinted by Hackett Publishing, 2003 with new introduction and discussion of relation between predicative and existential uses of the verb *einai*.

Reviews:

by George B. Kerferd in: *Archiv für Geschichte der Philosophie*, 58, 1976 pp. 60-64.

23. Kahn Charles H. Linguistic relativism and the Greek project of ontology. In *The question of Being*. Edited by Sprung Mervyn. University Park: University of Pennsylvania Press 1978. pp. 31-44
Paper read at a symposium at Brock University, St. Catherines, Ontario.
Published also in: *Neue Hefte für Philosophie* 15-16, 1979 pp. 20-33.
24. Keating B.F., "Lockwood and Mill on connotation and predication," *Analysis* 39: 183-188 (1979).
25. Ketchum Richard, "Being and existence in Greek ontology," *Archiv für Geschichte der Philosophie* 80 (3): 321-332 (1998).

"My purpose here, however, is (...) to point out weaknesses in the interpretation of Matthen.[1] I believe and will try to show both that the theory Matthen proposes is implausible and that the arguments for it are weak. I am aware of the inconclusiveness of this approach. Let his theory be as implausible as you will and his arguments as weak as you will. Still, if his interpretation is the best interpretation we know of, it ought to be accepted, at least tentatively.

A point of clarification is in order. Much of Matthen's article can be read simply as exegesis of Aristotle and as such I will have no bones to pick with it here. I do not doubt that Aristotle was committed to the existence of predicative complexes. Indeed others have pointed out his commitment so such 'kookie objects' in other contexts. Matthen has a novel interpretation of *De Interpretatione* 1-4 which it is not my purpose to dispute. My concern here is exclusively with Matthen's claim to have explained how a speaker of Ancient Greek might have understood the problematic passages quoted above as comments both about existence and about something's being something."

[1] Mohan Matthen "Greek Ontology and the 'Is' of Truth", *Phronesis*, 28/2 (1983), 113-135.

26. Lockwood Michael, "On predicating proper names," *The Philosophical Review* 84: 471-498 (1975).
"Mill's *System of Logic* is not often turned to by contemporary philosophers as a source of insights regarding the philosophy of language. To be sure, the terms "connotation" and "denotation," which Mill coined, have passed into quite general circulation; and Mill's doctrine of proper names has recently regained a certain popularity—largely as a result of the writings of Kripke. But the notions of connotation and denotation seem generally to be understood in the context of a Fregean or Carnapian scheme of thought which is, to a large extent, alien to Mill's own way of conceiving language; and Mill's views on proper names are usually discussed entirely without reference to what, for Mill, constitutes their theoretical rationale.
To some, it may come as a surprise to learn that Mill actually had anything amounting to a *theory* of language. In fact, however, there is to be gleaned from Mill's *Logic* a theory of quite considerable sophistication -- which I shall attempt, in part, to reconstruct and defend. What will emerge from our discussion is a conception of proper names which combines elements that might seem, at first blush, incompatible with one another. I shall argue that the Kripke-Donnellian conception of proper names as "rigid designators" or purely referential devices is anticipated by Mill to an even greater degree than is generally recognized; but that, curiously, this conception does not prevent Mill from allowing that proper names can function as genuine predicates. We shall find that, even for Mill, there is, after all, a sense in which proper names might be said to connote."
27. Lockwood Michael, "A question of connotation: an answer to Keating," *Analysis* 39: 189-194 (1979).

28. Malcolm John, "Some cautionary remarks on the 'is'/'teaches' analogy," *Oxford Studies in Ancient Philosophy*, 31: 281-296 (2006).
 "Lesley Brown suggests that Parmenides and Plato were not guilty of an oft-alleged existence/predication confusion since the relevant Greek verb, when used as a copula, had a built-in existential connotation, just as the same use of "teaches" can be understood both completely and incompletely. I challenge this approach on the grounds that it implies that the ancient Greeks were in the impossible position of not being able unproblematically to attribute properties to subjects recognized not to exist. I attempt to show that the evidence Brown presents for her thesis from Parmenides, Plato and Aristotle is inconclusive."
29. Mates Benson, "Identity and predication in Plato," *Phronesis. A Journal for Ancient Philosophy*: 211-229 (1979).
 Reprinted in: S. Knuuttila and J. Hintikka - *The logic of Being* - Dordrecht: Reidel 1986 pp. 29-47.
 "In coming to terms with the well-known difficulties concerning such Platonic assertions as "beauty is beautiful," "justice is just," "beauty is more beautiful than anything else," etc., modern commentators have frequently invoked the received notion that the verb "to be" has two or more senses, including in particular the so-called identity and predicative senses. The present paper argues in detail that this verb can be consistently understood as having a single sense throughout Plato's texts, and that such an interpretation does less violence to his doctrines than do the more usual accounts."
30. Matthen Mohan, "Greek ontology and the 'is' of truth," *Phronesis. A Journal for Ancient Philosophy* 28: 113-135 (1983).
 "This is an essay about the ontological presuppositions of a certain use of 'is' in Greek philosophy -- I shall describe it in the first part and present a hypothesis about its semantics in the second. I believe that my study has more than esoteric interest. First, it provides an alternative semantic account of what Charles Kahn has called the 'is' of truth, thereby shedding light on a number of issues in Greek ontology, including an Eleatic paradox of change and Aristotle's response to it. Second, it finds in the semantics of Greek a basis for admitting what have been called 'non-substantial individuals' or 'immanent characters' into accounts of Greek ontology. Third, it yields an interpretation of Aristotle's talk of 'unities' which is crucial to his treatment of substance in the central books of the *Metaphysics*."
31. Mendelsohn Richard L., "Frege's two senses of 'is'," *Notre Dame Journal of Formal Logic* 28: 139-160 (1987).
 "It is widely believed that there are two senses of 'is', the 'is' of identity and the 'is' of predication, and that this distinction was clearly drawn by Frege in *On Concept and Object*, although it was anticipated by others, perhaps, e.g., by Plato in the *Sophist*. As opposed to this received view, I will argue that Frege had not successfully distinguished two senses of 'is', indeed that his argument leads to precisely the opposite conclusion; on the other hand, the distinction Plato had supposedly drawn in the *Sophist*, which seems to rest on a semantics Frege was explicitly rejecting, is, given that semantic framework, viable.
 Frege had introduced this distinction in order to buttress his view that proper names could not serve as genuine predicates: a proper name occupying ostensible predicate position could not be functioning as a predicate because the 'is' in such a statement would have to be the 'is' of identity, not the 'is' of predication.
 I will argue that Frege had been mistaken on this point as well. More generally, I will argue that Frege's theoretical analysis of language is not, as he had thought, incompatible with proper names being allowed to play a genuinely predicative role.
 My remarks are prompted by Michael Lockwood's stimulating article, *On Predicating Proper Names* (1975), which contains an extensive and detailed criticism of Frege's position."
32. Mill James. *Analysis of the phenomena of the human mind*. London: Baldwin and Cradock, 1829. Two volumes.
 Reprinted Ildesheim, Georg Olms, 1982 and Bristol, Thoemmes, 2001.
 See Vol. I, Chapter IV. *Naming 4 Predication*
33. Pelletier Francis. *Parmenides, Plato and the semantics of not-being*. Chicago: University of

Chicago Press 1990.

34. Prior William, "Plato's analysis of Being and Not-Being in the *Sophist*," *Southern Journal of Philosophy* 18: 199-211 (1980).
 "In this paper I argue that Plato does not, as most scholars believe, distinguish different senses or uses of the verb 'to be' in the "Sophist". He succeeds in differentiating existential statements from statements of identity and predications, but with the aid of a verb 'to be' which he takes to be univocal and to be equivalent to 'to participate in'. I offer an analysis of "Sophist" 251a-257c, and focus in particular on 255e-256e. This passage displays numerous parallels with the middle dialogues, and it is misleading to treat it as indicative of a change in Plato's metaphysics."
35. Santayana George, "Some meanings of the word *is* [First version]," *Journal of Philosophy, Psychology and Scientific Method* 12: 66-68 (1915).
36. Santayana George, "Some meanings of the word *is* [Second version]," *Journal of Philosophy* 21: 365-377 (1924).
 Expanded version of the article published in 1915 (reprinted in: Justus Buchler and Benjamin Schwartz, eds. - *Obiter Scripta. Lectures, essays and reviews by George Santayana* - New York, Scribner's Sons, 1936 pp. 189-212).
 Reprinted in: Martin A. Coleman (ed.) - *The Essential Santayana: Selected Writings* - Bloomington, Indiana University Press, 2009 pp. 138-148.
 "This selection first appeared in *The Journal of Philosophy* (21 [1924]: 365-77), A shorter version with the same title was published in 1915 (*The journal of Philosophy, Psychology, and Scientific Methods*, 12 (1915):66-68). As early as 1914 Santayana had intended the article as the first chapter of his *Realms of Being*. The 1924 article was republished in *Obiter Scripta*, and in a letter to the editors of that volume Santayana wrote: "I am also glad that you have rescued the '*Meanings of the Word "Is"*'. On re-reading that article, I feel that it contains my whole philosophy in a very clear and succinct form; I was dissuaded by a friend from putting it into *The Realm of Essence*, and also by my own feeling that it covered too much ground to go into that volume. Here [in *Obiter Scripta*] it is in its place." (The Letters of George Santayana, Book Five, 1933-1936: The Works of George Santayana, Volume V, Book Five, Cambridge, The MIT Press, 2003, p. 158). The seven meanings of the word "is" that Santayana distinguished demonstrate different realms of being that make up his ontological system." M. Coleman, p. 138 of the 2009 reprint.
37. Van Bennekom Riek, "Aristotle and the copula," *Journal of the History of Philosophy* 24: 1-18 (1986).
 "How is it to be explained that Aristotle recognizes more than once the distinction between the copulative and the existential senses of "einai", but ignores this distinction in the crucial passage *Metaphysics* "D" 7 dealing with the ten different categories and the corresponding ten senses of "einai"? The author argues that Aristotle's fundamental conception of being was a fused one: "x is f" implies, and even states, "x exists"; he terms this principle: existence extraction license (eel). That eel leads to absurdities with negative "kafautou" predications and that it fits ill with the new ontological theory being developed in *Metaphysics* "H" 2 seems to have escaped Aristotle. The distinction between copulative and existential "einai" is applied by Aristotle only to "kata sumbebekos" predications, and an examination of *De interpretatione* 21a25ff shows that even here the tendency towards a fused concept of being prevails."
38. Vilkkko Risto. Existence, identity, and the algebra of logic. In *Foundations of the formal sciences. The history of the concept of the formal sciences*. Edited by Löwe Benedikt, Peckhaus Volker, and Räsch Thomas. London: College Publications 2006. pp. 255-265
 "One of the most interesting open problems in the history of philosophy concerns the genesis of contemporary logic epitomized by the Frege-Russell theory of quantifiers. One of the cornerstones of this theory is the distinction between the allegedly different meanings of ordinary-language verbs for being. According to the received view, such verbs are multiply ambiguous between the is of predication, the is of existence, the is of identity, and the is of subsumption. This assumption (a.k.a. Frege-Russell ambiguity thesis) is built into the notations that have been used in logic since Frege and Russell, in that the allegedly different meanings are expressed in the usual logical notations differently. It turns out that no philosopher before the 19th century assumed the Frege-Russell thesis.

It can be shown that Aristotle considered the Frege-Russell distinction but rejected it. He treated existence as a part of the force of a predicate term. Some people have ascribed it to Kant. However, it is false to say that Kant created, or maintained, the Frege-Russell thesis. His discussion of existence is often said to include a criticism of the idea that existence is a predicate. Strictly speaking it includes a stronger criticism, viz. the rejection of the idea that existence could be as much as a part of the force of a predicate term. Hence, after Kant the notion of existence became an orphan, as far as the logical representation of different propositions in syllogistic logic was concerned.

The next main development in logical theory was the algebra of logic that originated in England around the mid-19th century. The following two ideas came to the forefront: (1) the operators corresponding to our universal quantifier and existential quantifier were treated as duals; (2) universal quantifier expressions were taken to be relative to some universe of discourse, and was inevitably taken as the non-existence of exceptions in that domain. Because of the duality, existential quantifier expressions came to express existence. The orphaned notion of existence thus found a home, no longer in the predicative is but in the existential quantifier. This helps to explain the independent discovery of quantifiers by Frege and by Peirce.

This paper concentrates on what happened to the notion of existence after Kant and before Frege. Particular attention is paid to the English developments around mid-19th century and to the work of George Boole and Augustus De Morgan in particular."

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