The Frege-Russell 'Is' Ambiguity Thesis

The meaning of the word "Is"

"One of the most interesting open problems in the history of formal sciences concerns the rise of modern 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 verbs for being. According to received wisdom, such verbs are multiply ambiguous between the is of predication, the is of existence, the is of identity, and the is of subsumption. This view, also known as the Frege-Russell ambiguity thesis, is built into the notations that have been used in logic since the turn of the 20th century, in that the allegedly different meanings are expressed differently in the usual logical notations. (1) The is of identity is expressed by the identity sign a = b, the is of predication by a singular term's filling the argument slot of a predicative expression \( P(a) \), the is of existence by the existential quantifier \( (\exists x)P(x) \), and the is of subsumption by a general conditional of the form \( (\forall x) (x \in S \supset x \in P) \). Both Gottlob Frege and Bertrand Russell attached great importance to the ambiguity of the verb is. During the 20th century it became commonplace to subscribe to this thesis even though it is not necessary or even fully obvious (cf. [Hintikka 1979]; [Mates 1979]). But then again, it turns out that after the Middle Ages no philosopher assumed such multiple ambiguity before the 19th century. What happened? How did the Frege-Russell thesis come about? In what follows, I approach these questions from a historical point of view. I first say a few introductory words about the treatment of existence in Aristotle and Kant, and thereafter focus on the 19th century English developments in the field of the algebra of logic and on the ideas of George Boole and Augustus De Morgan in particular.

Aristotle considered the Frege-Russell distinction but rejected it. His treatment of existence in the context of a syllogistically constructed science was in rough agreement with the ancient Greek language, in which there were no separate verbs for existence. Existence was expressed by the absolute construction with \( \epsilon \tau \iota \nu \) which looks like a special case of predication, e.g., "Zeus is" as a limiting case of such statements as "Zeus is a god" or "Zeus is powerful". In effect, Aristotle treated the different Frege-Russell senses of different components in the force of \( \epsilon \tau \iota \nu \). Each of these components could be absent or present on any one occasion of the use of \( \epsilon \tau \iota \nu \). In syllogistic reasoning, existence was sometimes present as part of the force of the predicate term, sometimes absent. The existential force trickled down from the most general terms of the sense in question along a sequence of syllogistic conclusions. Hence, in any one particular science existential force had to be assured, according to Aristotle, only for the widest generic term defining the field of that science:

Thus we assume the meaning alike of unity, straight, and triangular; but while as regards unity and magnitude we assume also the fact of their existence, in the case of the remainder proof is required. [\textit{An. post.}, A 10, 76a, 34-36]

Existence could not serve alone as a predicate term because it would have been too broad a term, not restricted to any one category and thus not an essence of anything [\textit{An. post.}, B 7, 92b, 13-15]. In this sense, according to Aristotle, existence was not a predicate. However, it could be a part of the force of a predicate term.

It is often said that Kant's discussion of existence includes a criticism of the idea that existence is a predicate. In fact, it includes a stronger criticism, namely the rejection of the idea that existence could be even a part of the force of a predicate term. According to Kant, existence adds nothing to a concept of a thing:

'\textit{Being}' is obviously not a real predicate; that is, it is not a concept of something which could be added to the concept of a thing. [...] The small word 'is' adds no new predicate. [\textit{Kritik der reinen Vernunft}, B 625]
This does not mean that Kant embraced the Frege-Russell thesis. It means that at the turn of the 19th century the notion of existence became homeless, as far as the logical representation of different propositions was concerned. It must be admitted, though, that Kant's criticism served to disassociate the predicative and the existential uses of is from one another. According to Leila Haaparanta, Kant seems to have inspired the Frege-Russell distinction [Haaparanta 1986].

After Kant the next major 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 the syllogistical standard forms of universal and particular judgments were treated as duals;
2) universal judgments were taken to be relative to some universe of discourse and were inevitably taken as the non-existence of exceptions in that domain.

Because of the duality, existential quantifier expressions came to express existence. The homeless notion of existence thus found a new home, no longer in the predicative is but in the existential quantifier.

Before moving on to take a closer look upon the ideas of Augustus De Morgan and George Boole, it is important to acknowledge that neither of them introduced existential or universal quantifiers, and therefore they must not be regarded as early pioneers of the predicate calculus. However, at least De Morgan seems to have been aware of at least some of the difficulties that arose in the absence of quantifiers [George C. Smith (ed.), The Boole-De Morgan Correspondence: 1842-1864, Oxford: Clarendon Press 1982, p. 24].

Notes

(1) Stanislaw Leśniewski's notation provides an important exception here.
(2) Strictly speaking it was upon Leibniz's initiative that the idea of an algebraic structure of logic began to grow -- even though it was Boole who really started its systematic development.


"Being" From a linguistic point of view

"Nowadays, logicians tend to draw a sharp distinction between the 'existential' function of 'the verb to be' and, its various 'predicative' or 'copulative', functions. The philosophical importance of this distinction lies in the fact that most modern philosophers would say that existence cannot be predicated of objects in the same sense as their various attributes, or properties, but is presupposed in the identification of objects or in any reference to them. (...) It is worth noting, however, that in English 'the verb to be' is not used as freely in existential sentences as it was in Greek: it is such sentences as God is (where 'the verb to be' is perfectly normal in Greek) that have mainly interested philosophers. What would generally be described as the 'existential' use of 'the verb to be' in English is not common except with a locative or temporal complement. Examples of this usage are (i) There are lions in Africa, and (ii) The accident was yesterday. We shall discuss such 'existential' sentences presently.

Among the 'predicative' uses of 'the verb to be' logicians customarily distinguish: (a) the identification of one entity with another (a = b: e.g. That man is John); (b) class-membership (b ∈ C: e.g. John is a Catholic, 'John is a member of the class of persons characterized as Catholic'); and (c) class-inclusion (C ⊂ D: Catholics are Christians, 'The members of the class of persons characterized as Catholic are included among the members of the class of persons characterized as Christians').

Though logically important, the distinction between class-membership and class-inclusion does not appear to be of any syntactic significance in most languages. The distinction between 'characterizing' and 'sortal' sentences (...) is, however, of considerable importance: cf. Apples are sweet and Apples are fruit, The former tend to have an 'adjectival' predicate (in languages where one
can draw a distinction between 'adjectives' and 'verbs'), and the latter a nominal predicate. The syntactic analysis of sentences with nominal predicates (e.g. *Apples are fruit, John is a soldier, Mary is still a very young girl*) is a very complex matter: we shall not go into the question here. We will disregard the differences between various subtypes of nominal predicates and treat them all like 'adjectival' predicates. For terminological convenience, we will refer to both classes of sentences (whether they are 'characterizing' or 'sortal', and regardless of any other differences) as *attributive*.

(pp. 388-389)


The history of the concept of "being" and the "Is" ambiguity thesis

"This history involves more changes and contrasts than one might perhaps expect. For one thing, we twentieth-century philosophers are wont to approach the notion of being by means of the Frege-Russell ambiguity thesis. As we all know this thesis concerns the notion of being, as codified in verbs for being in languages like the English *is*, German *ist* or the ancient Greek *estin*. What it asserts is that these verbs are multiply ambiguous. We have to distinguish (according to this thesis) from each other the *ises* of existence, identity, predication and subsumption. Indeed we are in fact supposed to have learned to distinguish them from each other in practice, for we have all been taught to use first-order logic as our canonical notation in logic and logical analysis. It is in order for me to emphasize the word ambiguity here. Every half-way sensitive analyst (or perhaps I should say, every sensible analyst) will grant that verbs for being like the English *is* are used in different ways on different occasions. What the Frege-Russell thesis does, is to blame these differences in use on the ambiguity of a single word, instead of explaining the difference in use away in some other way, for instance by reference to the context of use.

The Frege-Russell ambiguity thesis has played a major role in twentieth-century philosophy. With his usual modesty, Russell (1914, p. 50) called it "the first serious advance in real logic since the time of the Greeks". One of the many surprises in my brief history of the concept of being is how recent a belief in the Frege-Russell thesis is in the history of philosophy. As far as I know, it is not found in a clear form before the nineteenth century. Its genesis needs and deserves a closer scrutiny, but apparently different versions of the ambiguity thesis were adopted independently of each other by different thinkers. Some historians assign the credit (or the blame) for introducing the distinction between the existential *is* and the predicative *is* to Kant. (But see below.) In contrast, the thesis is conspicuous by its absence from such philosophers as Aristotle.

(...) As was indicated, it has been claimed that the Frege-Russell distinction can be traced back to Kant and his thesis that "existence is not a predicate". Meinong's case shows that this cannot be the full story. For one important thing, even though he adopted a part of the Frege-Russell distinction, at the same time existence was in a sense a predicate according to Meinong. After all, only existential judgements were for him contingent." (pp. 29-31)


Charles H. Kahn on "Being" in Ancient Greek

"I am not myself a linguistic relativist. I want, in effect, to defend the concept of being against its modern detractors. What I hope to do in this paper is to show that when the Greek concept of being (as introduced by Parmenides and developed by Plato) is properly understood it represents a valid and indeed inevitable topic for philosophic inquiry. It turns out, in fact, to be fundamentally the same topic that is pursued in the modern ontological tradition of Frege, the early Wittgenstein, and Quine. And it also turns out to be very different from the questions of personal existence and the
human condition which dominate that other school of modern ontology associated with the name of Heidegger. (2)

In order to meet the challenge of linguistic relativism, we must first give an adequate account of the linguistic functions of the verb 'be,' (eimi in ancient Greek), and then show that these functions provide the basis for a coherent concept and a clear philosophical question. Let me briefly indicate in advance what I take the solution to be. The concept of being in Greek philosophy refers to the nature of reality or the structure of the world, in the very general sense of 'the world,' which includes whatever we can know or investigate and whatever we can describe in true or false statements. The question of being is then: How must the world be structured in order for inquiry, knowledge, science, and true discourse or, for that matter, false discourse to be possible?

On this view of the concept of being, the key notion is that of truth -- the goal of science and the aim of declarative speech. If the claims of linguistic relativism have seemed plausible in regard to the concept of being, that is due in part to the fact that they rely upon an inadequate account of the functions of the verb 'be,' an account in which the connections with truth and falsehood -- what I call the 'veridical' uses of the verb are generally overlooked. Once we put the notion of truth at the heart of the Greek concept of being, the internal coherence and general significance of this concept will become clear. I have argued elsewhere that this concept of being does not rest on an illegitimate confusion, since it brings together three distinct notions -- existence, predication, and truth -- which belong together in any ontology or in any metaphysical scheme. (3) At the same time it is important to recognize that these three notions are distinct, and that the distinction between them was not always clearly seen in Greek philosophy, precisely because the same verb eimi, and its participle on, was used to express all three. Here, as elsewhere, it is important to give the devil his due; if we do not, as the saying goes, he will take more than his share. In defending the concept of being against the charge of linguistic confusion, it is important to recognize the genuine possibilities for confusion that were latent in the multiple usage of the verb. If we bear in mind the distinctions between existence, predication, and truth, and recognize that these distinctions were often overlooked because of a single linguistic expression for all three, we will be in a better position to interpret a number of perplexing passages in Plato, Aristotle, and Parmenides, for we will be in a position to articulate some problems more clearly than the Greek philosophers were able to do. My guess is that the same may be true for Indian philosophy, for the basic functions of the verb as in Sanskrit seem to be very nearly the same as those of eimi in Greek. If my linguistic analysis of the verb 'be' is adequate for Greek, it (or a similar analysis) ought to be adequate for Sanskrit. And if the linguistic analysis of 'be' can shed useful light on the Greek concept of being, the same relation ought to hold between an analysis of the Sanskrit verb and the Indian concept of being.

Since I am not an Indologist, I offer this parallel only for what it may be worth, as a heuristic hypothesis and as a challenge to Sanskrit scholars and specialists in Indian philosophy. I shall limit myself to the Greek material, and proceed in two steps. First I shall report some of the results of the linguistic analysis of the Greek verb which I have published elsewhere. Then I shall apply this analysis to the interpretation of two key passages for the development of the terminology and concepts of Greek ontology. The first passage is from the poem of Parmenides, where the concept of being makes its first appearance in the philosophical tradition of the West. The second passage is Plato's initial exposition of the doctrine of Forms in the Phaedo, where we have the first full-scale statement of Plato's own ontology.

I begin, then, by summarizing some results of the linguistic analysis. One central feature of my account is the claim that the verb 'be' in Greek -- and, I dare say, in Indo-European generally -- is primarily and fundamentally a copula and not a verb of existence, as comparative linguists have usually held. There is no evidence for the traditional assumption that the verbal root es originally meant only existence (or the like) and gradually declined into the use as "mere copula." By claiming that the copula uses the primary, I mean, not only that they are factually (or statistically) predominant from the earliest texts, but also that they provide the only possible point of departure for a theoretic account of the whole system of uses for the verb. I do not claim that the copula uses are older than the others, but only that if we regard them as older we can understand how the other uses could have developed from them. Talk of "development" here is a mere theoretical convenience, like a myth of creation or an original social compact, a conceptual device that serves to clarify the relations of logical priority and dependence between different factors in a complex system.

From the point of view of the language, then, the primary or central use of the verb is as a copula. (4) By a copula use I mean an occurrence of the verb with a predicate adjective ("I am tall"), a
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The verb 'be' as copula in Indo-European is characterized by two features which are important for the philosophical development. The first I call the locative, the second the durative aspect. By the locative feature I mean the fact that the verb serves for predication in general, not only with nominal predicates (predicate nouns and adjectives or participles) but specifically for statements of place, like "We are in this room." This locative use seems so essential to the meaning of the verb that we find Aristotle saying that most people believe that whatever is, is somewhere; what is nowhere is nothing: for Greek common sense, a thing cannot really be unless it is somewhere. Beginning with Plato, some philosophers will deny the necessity of this connection between being and being in some place. But it has a strong intuitive hold on the Greek feeling about "what is."

The second feature of the Indo-European copula, the durative aspect, is even more decisive for the Greek view of being. This is the aspect which contrasts 'be' with 'become,' eimi with gignomai as copula verb (and as with bhu in Sanskrit). What is at issue here is not simply the aspectual opposition familiar in comparative linguistics, where the present-imperfect stem is contrasted with aorist and perfect, but a more general linguistic contrast between being in a state or being in a place, on the one hand, and change of state or change of place on the other hand. This general aspectual contrast is best described as an opposition between stative and mutative, or static and kinetic. We can illustrate the opposition in English by contrasting "I am tired" with "I become tired," "I am tall" with "I grow tall," "I am in Canada" with "I go to Canada" or "I arrive in Canada." This aspectual contrast seems to be much more general than Indo-European, for it is founded in the nature of things, and there is likely to be some expression for it in every language. But it is characteristic of Indo-European that the root es is typically, and in Greek almost exclusively, used to express the stative aspect, whereas a variety of other copulas are used for predication with a mutative nuance (there is no single root for 'be'). There is no single Indo-European word for 'become,' as there is a single root for 'be'). There is, in short, an essential connection in Indo-European between the idea of being and the idea of stability or remaining in the same state.

So far we have considered only the copula or predicative uses of 'be.' There are of course other, non-copulative uses, of which I will mention only two. One is the existential use, or rather the family of uses with an existential sense. As an example we may take the familiar Homeric verse, "There is a city Ephyre in the corner of horse-nourishing Argos." The connection of this existential use with the copula construction ("Ephyre is a city," "Ephyre is in Argos") is fairly obvious. Other existential uses are farther removed from the copula construction, but I shall not go into these complications here.

Finally we have what I call the veridical use, where 'be' expresses neither predication nor existence but the truth of a statement or a belief. The standard veridical construction is of the form "Things are as you say," esti tauta houto hosper su legeis, or for short, esti tauta or esti houto. Curiously enough, the ancient veridical use has recently had a vigorous revival in colloquial English: "Tell it like it is." The distinctive features of the veridical construction are (1) that the verb is not conjoined with a predicate but with an implied or explicit comparison to a clause of saying or thinking ("it is ... like you say"), and (2) that the underlying subject of the verb is a sentence or a sentential content roughly speaking, a proposition: the 'it' refers to a sentence, expressed or understood. The importance of this veridical use in ancient Indo-European is reflected by the widespread use of the root es, and above all its participial derivatives (from sant), in the sense of 'truth': in Greek ontos, toi onto, 'truly'; legein ta onta 'state the facts'; in archaic English we find 'sooth' for 'truth'; and in Sanskrit there are the familiar derivatives of sat (e.g., satya) in the same sense.

So much for the linguistic preliminaries. We have first the copula uses with their locative connotation or locative application and their durative-stative aspect. We have next the existential uses; and, finally, the veridical construction with the related uses of the participial forms to mean 'truth.' Now my claim about the philosophic development of the Greek concept of being is roughly this: the last-named use must be placed first. The point of departure for the philosophers is the verbal use and the notion of truth. Philosophers are primarily concerned with knowledge or the search for knowledge, and hence with truth in speech and in thought. But as the veridical construction shows, the concept of truth involves some kind of correlation or 'fit' between what is said or thought, on one side, and what is, or what is the case, or the way things are, on the other side. Let us call this the correlation between assertion and reality, where 'assertion' is used neutrally both for saying that it is so and for thinking that it is so; and 'reality' is used simply as a convenient abbreviation for the fact that it is so or what happens to be the case. In saying that the concept of
truth implies a correlation or a 'fit' in this sense between assertion and reality, I think we beg no metaphysical questions. We simply articulate the connection of ideas expressed in the Greek locutions *esti tauta* and *esti houto*. And precisely the same connection is expressed in the modern locution "Tell it like it is."

So we see how the philosophers' interest in knowledge and truth, taken together with the use of 'be' and its participle to mean 'truth' or 'what is so,' immediately leads to the concept of being as reality. I repeat, I am using 'reality' here not in any large metaphysical sense but simply as a convenient term in the hermeneutical metalanguage: as a mere name or counter for the facts that make true statements true and false statements false, or for whatever it is "in the world" (for whatever "is the case") that makes some assertions and some judgments correct and others mistaken. If I assert either in thought or in speech that the sun is shining, and if what I assert is true, then the corresponding 'reality' is simply the fact that the sun is shining.

So far I have said nothing about 'be' as verb of existence or as copula. I have shown only that starting from the veridical locutions and the notion of being as truth we immediately get to the related notion of being as reality, in a suitably loose and generalized sense of 'reality.' I think that these two notions, together with the locative idea that whatever is, is somewhere, and with the durative-stative aspect of the verb, are all we require for interpreting Parmenides' notion of being. Of course, we can easily see how the existential and copula uses of 'be' will also turn up, if we think of the reality in question as expressed by a subject-predicate sentence—for instance, by the sentence "The sun is shining." If for this sentence is true, then its subject (the sun) must exist. And the sentence uses the copula verb 'is' to predicate something of this subject, namely that it is shining, or that its light reaches us. So when we are talking about truth and reality, the existential and copulative uses of 'be' are never far away. But I insist that if we begin to interpret the concept of being by looking for existential or copula uses of the verb, we will not only make unnecessary trouble for ourselves; we may miss the real point. We will not only play into the hands of the linguistic relativists; we will fail to grasp the essential features of the Greek concept of being." (pp. 32-36)

Notes

(2) I shall not dwell here upon the contrast between the Greek and the Heideggerian conceptions of Being. See my remarks on "static being and personal Dasein" in The Verb 'Be' in Ancient Greek (Dordrecht : Reidel, 1973), pp. 415-19.

(3) In addition to Chapter 8 of The Verb 'Be' in Ancient Greek, see "On the Theory of the Verb 'to be,'" in Logic and Ontology, ed. Milton K. Munitz (New York : New York University Press, 1973), pp. 1-20. In these studies I was primarily concerned with the unity of the linguistic system of the verb as ordinarily used. By contrast, the present paper deals explicitly with the special quasi-technical use of the verb and its nominal derivatives ( *by* and *obcria* ) to formulate the philosophic concept of Being. I thus return to the topic originally sketched in "The Greek Verb 'to be' and the Concept of Being," Foundations of Language 2 (1966): 245-65.

(4) This linguistic claim that the copula uses are fundamental for the system of the verb as a whole is logically independent of my claim that, as a fact in the history of philosophy, the idea of truth (and falsehood) associated with the veridical uses is the primary notion for the development of the metaphysical concept of Being in Plato and Parmenides. Either claim might be in error without the other thesis being affected either way. But of course there is some connection between the function of copula and the veridical idea. See my remarks on the notion of truth-claim implicit in the copula use, The Verb 'Be' in Ancient Greek, pp. 186-91, 407f.


*ἐστι* in Ancient Greek
"Whether ἐστὶ is orthotone ( ἔστι) or enclitic depends solely on its position: ἐστὶ when initial (or quasi-initial: see below), otherwise ἐστὶ. This is both stated by ancient grammarians and confirmed by linguistic theory; (1) the modern differentiation between ἐστὶ copula, ἐστὶ to affirm existence or possibility, is mistaken. (2) The accentual treatment of verbs in Greek will originally have been the same as in Sanskrit: all finite verbs in independent clauses unaccented when not initial, accented only when initial. Most unaccented verbs acquired an accent under the rule of limitation, and became thereby orthotone; (3) the few forms short enough to remain unaccented acquired an accent by analogy with related forms which were not. Only two tenses are capable of remaining unaccented in all their forms, the pres. indic. of ἐίμι and of φημι; and these are precisely the two tenses which could be enclitic in historical Greek. (4) Their enclisis is a survival from the old universal enclisis of verbs; it should operate, therefore, in the same way in which that enclisis operated, in accordance with position. (5) According to Herodian (i. 553) ἐστὶ is orthotone not only when initial but also after οὐ, καί, εί, ἀλλά, ως, τοῦτο. If this is true, it means that the original initial accentuation was extended, surprisingly, to a number of quasi-initial positions. (6) But it may, in part at least, be false: the Homeric scholia (BT On Iliad I. 63 ; cf. A on 6. 152) say expressly that ἐστὶ is orthotone only when initial and after οὐ." (pp. 425-426)

Notes

(1) See Wackernagel, 'Der griechische Verbalakzent' Zeitschrift für vergleichende Sprachforschung, 23, [1877], 457 ff., (= Kleine Schriften, 1955, 1058 ff.); I give only the barest essentials.
(2) I say 'modern' (it was propounded by Gottfried Hermann, De emendanda ratione graecae grammaticae pars I. [Lipsia, 1801], 84 ff.), but it seems to have its root in antiquity: I notice at the last moment (what the handbooks ignore) that Eustathius (On Iliad., p. 880. 22, discrepantly with his remarks On Odyssey. p. 1600. 53) and Photios (s.v. ἐστὶν) record a view that the accent varies with the meaning (paroxytone ἐπειδὰν ἀποφαινώμεθα περί του ώς ὑπάρχει [ἀποφαινώμεθα αυτοι περι τούτου πάρειν τι Phot.], οἷον ἐστι πολίς Εφύρῃ , oxytone ὅταν πρόσ ἐρώησιν ἀποκρινώμεθα ); cf. also schol. T On Iliad. 23. 157 and 549. There seem to have been divergent practices; but we shall do well to prefer that which linguistic theory shows to have been original.
(3) Hence their recessive accent (which was then universalized in all positions: e.g. initial γνοιέσ [Sanskrit jñeyās] supplanted by γνοιεσ from enclitic γνοιεσ.
(4) Enclisis of φημι is perhaps the surest token that enclisis of ἐίμι is not conditioned by its 'weakness of meaning' as copula.
(5) The original orthotone accents should have been (on the analogy of Sanskrit) ἐίμι (ἔσσι) ἐστιέσστον ἐσμὲν ἐστὶ ἐσι and similarly φημι etc.; but all save ἐστὶ are traditionally oxytone ( ἐίμι, φημι, etc.). Influence of the enclitic forms in all but the commonest case? But there is some evidence for initial φημι: Tyrannion cited by Eustathius On Odyssey, p. 1653, 58.
(6) 'Surprisingly', for this 'quasi-initial' position is precisely the position (second in their clause) to which enclitics tend.

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The Concept of *Existence*: History and Definitions by Leading Philosophers
Gottfried Hermann, *De emendanda ratione graecae grammaticae pars I*. Lipsia, 1801, Cap. XXVIII, *De enclitico ἒστιν* pp. 84-86