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## The Verb ‘Be’ (εἶμὶ) and Aristotelian Ontology

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## RESUMEN

El profesor Hintikka ha escrito importantes artículos y ensayos sobre la ontología de Aristóteles, y en particular sobre los problemas relacionados con el significado del verbo ‘ser’. El autor de este artículo comienza subrayando la importancia de algunas aportaciones de Hintikka para la interpretación de la ontología aristotélica. A continuación se centra en algunos puntos relacionados con la doctrina aristotélica del ser. En su opinión, los puntos de vista aristotélicos acerca del verbo ‘ser’ (εἶμὶ) *dependen de su concepción general del verbo* (ᾧμα). Por ello analiza la doctrina de Aristóteles acerca de ambos, el verbo como tal y el verbo εἶμὶ. Desde este punto de vista específico trata de arrojar alguna luz sobre la doctrina aristotélica de la predicación así como sobre su concepción de las categorías del *ser*. A lo largo de su exposición el autor ofrece algunas observaciones acerca de la proximidad de su propia hermenéutica de Aristóteles respecto de algunas ideas de Hintikka sobre los mismos temas.

PALABRAS CLAVE: *ser, ontología, metafísica, Aristóteles, Hintikka.*

## ABSTRACT

Professor Hintikka has written a number of important articles and essays on Aristotelian ontology, and particularly on the problems relating to the meaning of the verb ‘be’. The author of this article starts by underlining the relevance of some Hintikkian contributions to the interpretation of Aristotle’s ontology. He then goes on to focus on certain issues related to the Aristotelian doctrine of being. In this author’s opinion, Aristotle’s views on the verb ‘be’ (εἶμὶ) *are dependent on his general conception of the verb* (ᾧμα). He therefore analyses Aristotle’s doctrine on both the verb as such and on the verb εἶμὶ. From this specific perspective he attempts to throw some light on the Aristotelian doctrine of predication and on his conception of the categories of *being*. Throughout this discussion, the author offers some remarks on the proximity of his own hermeneutics of Aristotle’s ontology to some of Hintikka’s ideas on the same issues.

KEYWORDS: *Being, Ontology, Metaphysics, Aristotle, Hintikka.*

## I

In this contribution I would like to pay tribute to Professor Hintikka by offering some remarks on Aristotle's approach to the verb 'be' (εἶμι) in connection to ontology.

Professor Hintikka has written several important articles and essays not only on Aristotle, but also on other outstanding philosophers in history such as Kant and Descartes. His works on Aristotle include an examination of Aristotelian ontology, and particularly the problems relating to the meaning of the verb 'be', εἶμι.

Professor Hintikka has studied these philosophers from a clearly stated hermeneutical perspective: his strong and reasonable belief that contemporary philosophical ideas and systematic achievements can be useful for providing a better understanding of philosophers in the past. In Hintikka's own words,

It is not only that systematic insights may be used as an integral part of historical interpretation. Sometimes they must be so used. And this "sometimes" includes (I hold) some of the most important issues in the history of philosophy [Hintikka (2006), p. 41].

According to this hermeneutical approach, Jaakko Hintikka refers to *the contemporary assumption that the verbs for being are semantically ambiguous*. This prejudice has been called the "Frege-Russell ambiguity thesis" by Hintikka himself. These are his own statements on the matter:

Everybody agrees that on different occasions verbs for being have different uses. They can express (among other things) identity, predication, existence and subsumption. Hence it is natural to say that on different occasions they have a different force or a different sense. However, there is a much stronger thesis implicit and sometimes explicit in modern philosophers like Frege and Russell. They in effect propose to explain the differences in use or force by claiming that the crucial verbs like *is* or ἐστίν [*estin*] are ambiguous. This thesis might be called the FR ambiguity thesis. [Hintikka (2006), p. 43].<sup>1</sup>

With this hermeneutical instrument in his hands, Hintikka has analyzed several of Aristotle's logical and metaphysical texts. After an intelligent examination of these texts he has emphatically stated that *Aristotle in no way shares this FR ambiguity thesis*. Moreover, in his view Aristotle explicitly rejects it.<sup>2</sup> In fact, "being ambiguous" must be distinguished from "having several senses". Aristotle accepts and often emphasizes that the verb εἶμι has several uses or several semantic forces. Nevertheless, they all are components of one unitary meaning. And, as Hintikka argues, since the various Frege-Russell *senses* are taken by Aristotle to be merely different *components of a*

*unitary meaning*, one of them could be absent without affecting the basic meaning of the word.

This is the general interpretation of Aristotle's conception of being as proposed by Hintikka. It must be said that I substantially agree with him. Of course, Hintikka offers far more specific and detailed remarks on the senses of εἶμι, particularly on the way Aristotle deals with the notion of *identity-identification*, and with the notion of *existence*. I shall come later to his hermeneutics of these two senses of being. Meanwhile, I would like to underline that I find his suggestion on existence as a part of the predicate term as being particularly interesting. As he says,

The essential novelty of Frege's new logic is therefore not the notion of quantifier but the location of the existential import in a logical formula. In the form of a suggestive but oversimplified slogan, one can say that *for Aristotle existential import was carried by the predicate term while for the moderns it is carried by the existential quantifier*. This is crucial difference between Aristotelian logic and modern logic [Vilkko and Hintikka (2006), p. 366. Italics added].

As I said, I concur with Hintikka's approach, although there are some specific points on which my own reading of Aristotle's texts does not fully coincide with Hintikka's powerful interpretation. However, I consider that the following remarks on the verb εἶμι in Aristotle may in some way be complementary to his views.

## II

In my comments below I shall focus on an issue which I believe to be of great importance to an understanding of Aristotelian views on logic and ontology. I intend to argue and explain that Aristotle's logical and ontological views concerning *the verb 'be' (εἶμι)* are highly dependent on his interpretation of the nature of the *verb in general (ῥῆμα)*. This means that he regards the verb 'be' from the perspective of the verb as such – or in other words, that he views the verb 'be' *from the point of view of verbality as such*.

Let us take a look at Aristotle's conception of the verb as such in *De Interpretatione*.<sup>3</sup>

As is well known, Aristotle *opposes name (ὄνομα) to verb (ῥῆμα)*<sup>4</sup>. In *De Interpretatione* a name is defined as 1) a spoken sound; 2) significant; 3) by convention; 4) *which does not indicate time* (literally: "without time", ἄνευ χρόνου); 5) none of whose parts is significant in separation [16a19-20]. All these features of names also belong to verbs, with only one exception: feature number 4 – being without time, ἄνευ χρόνου – since *verbs connote*

time. In Aristotle's own words, "a verb is what additionally signifies time": προσσημαίνει χρόνον [16b6,18].

The preposition πρὸς in the word προσ-σημαίνειν (which is properly translated into English by Ackrill as "additionally signifying") points to the idea of *adding* – of adding something to something which pre-exists, which is already given.<sup>5</sup> Thus, πρὸς specifically indicates that *a reference to time is added to a previously given meaning*. Evidently the meaning already given is the meaning of the corresponding name.<sup>6</sup>

The fact that the reference to time is considered as something that is added to the nominal meaning of a word would seem to imply that *names are prior to verbs* from a genetic logical-linguistic point of view: firstly, there is a notion signified by a name; then there is the verbal form to express *its real presence or actuality or existence at a moment in time*. In my opinion, this precedence of names over verbs is important, although scholars and Aristotelian commentators do not appear to pay any particular attention to it.

But let us go on. There is no doubt this reference to time constitutes one outstanding feature of verbs, maybe the most obvious one. However, *we have to consider a second feature* of verbs as opposed to names. As Aristotle says, a verb "is a sign (σημεῖον) of the things said of something else" [16a7], which means that verbs always connote *the function of the predicate*.

I would also like to offer a minor observation on this point, and highlight the fact that Aristotle does not say that a verb is always a predicate. Rather, he says that a verb always formally connotes the predicate-function, insofar as verbal morphemes demand its attribution to a subject. So, it could be said that a verb additionally signifies this predicate-function in the same way as it additionally signifies time, and that Aristotle therefore views verbs in both cases from a semantic point of view. In fact, Aristotle himself *uses the word* προσ-σημαίνειν to indicate the predicative function when he says that a verb "additionally signifies some combination" (προσσημαίνει δὲ σύνθεσιν τινα: [16b24]). In my opinion, Aristotle intends to suggest that *the demand to become attributed to something is formally indicated* by the verbal morphemes of number and person.

Finally, there is a third semantic feature of verbs: *the assertive function* which is also additionally signified by the verbal form and which becomes fulfilled when the verb is actually attributed as a predicate to a subject.<sup>7</sup>

These three semantic functions have been respectively named by Pierre Aubenque (1991) as "temporal", "synthetic" and "thetic" connotations. The most important point for us in connection to ontology is that *in their pure and most formal meaning, these three connotations specifically belong to 'be'*. In fact, Aristotle explicitly assumes that all sentences – that is, every sentence with a verbal predicate (like 'a man sings') – can be transformed into a copulative sentence with a nominal predicate (in our example we can transform the sentence 'a man sings' into 'a man is singing') *salvo sensu*, that is, with-

out any loss or increase of meaning. Thus some pages later in *De Interpretatione*, he says that “there is no difference between saying that a man walks and saying that a man is walking” [12, 21b9-10]. This implies that introducing or removing the verb ‘be’ as a copula does not produce any change in the meaning of a sentence. When we produce this kind of transformation (from ‘a man sings’ to ‘a man is singing’) we make a dual move. In the first place, we divide the whole semantic content of the predicate ‘sings’ into two blocks: on the one hand, we take *the meaning*, and on the other hand, we take *the additional meanings*, that is, the specific verbal connotations (the temporal, synthetic andthetic co-significations); and (2) once the whole meaning has been divided this way, we transfer the verbal connotations to ‘is’ while the nominal meaning remains in the predicate. The copula thus assumes the specific verbal signification. We may say that in copulative predications the copula ‘is’ assumes and represents the *verbality* as such, that which is specifically and exclusively verbal.

I would like to add three further remarks.

1. In the first place, I suggest that – to my mind – *the most important verbal co-signification is the assertive orthetic one* which indicates the existence or actuality of what is signified by the verb.<sup>8</sup> In the example I have proposed – ‘a man sings’ – we primarily affirm or assert that there is a song, that singing is taking place. According to my reading of the text, this is Aristotle’s meaning in the sentence “it additionally signifies (προσσημαίνει) that it is holding now (τὸ νῦν ὑπάρχειν). And it is always a sign of what holds, that is, holds of a subject.” [(*De Interpretatione* 3), 16b9-10].

2. In the second place, and according to my reading of the passage, I would like to emphasize once more that *the verbal assertion of actuality or existence refers primarily to the predicate*, not to the subject, contrary to the way it is usually – almost universally – understood. Thus, when we assert that ‘a man is singing’ by using the logically equivalent form ‘a man sings’, we do not primarily assert that there is someone who is a man and who is singing; our statement goes in the opposite direction: we properly assert that *there is singing*, which is actualized in someone *or* by someone who is a man.

No doubt in order to grasp this way of understanding statements (and here I refer to ‘statements’ as those sentences which are termed *lógos apophantikós* by Aristotle) we must take into account the Aristotelian way of formulating predicative sentences. Properly expressed, a Greek sentence in the form ‘A is B’ is equivalent to the form ‘B belongs to A’, or ‘B takes place in A’. Thus, returning to our example, ‘a man sings’ (τις ἄνθρωπος ψάλλει) means that singing is taking place, or exists, in a man (τὸ ψάλλειν ὑπάρχει ἀνθρώπῳ τι).<sup>9</sup>

All this recalls two points in Hintikka's account of the different senses of εἶναι. The first concerns his assertion that for Aristotle, existence has its own place in the predicate and not in any implicit or explicit quantifier. I fully agree with this, with only one further clarification (which would surely be accepted by Hintikka): that the existential force belongs *in the verbal side* of the predicate term, *not in its nominal side*. As I have sought to demonstrate, when we say 'a man *is* singing' it is the copula (*is*, ἔστι) that assumes thethetic co-signification indicating actuality or existence.

My second point refers to a proposal made by Hintikka when discussing the '*is*' of identification in connection to the category of substance. Let me quote his own words:

The root idea is that whenever one succeeds in saying anything meaningful, it must be about something, perhaps not about some thing, but in any case about some entity. Hence, if we want to spell out fully what we mean, we must spell out what that entity *is* (or those entities *are*). And according to what was just found, the variety of being encoded in this *is* (or *are*) is the *is* of identity, for the specification of what we are speaking about means specifying the substance in question. This specification is usually left tacit, but we must grasp what it is before we fully understand what is meant. Hence in any statement *X is Y* (with any kind of *is*), there is a way of spelling out its fuller meaning as follows:

(8) *X is a certain substance Z, and Z is Y*

Here the first *is* is the *is* of identification while the second *is* can be whatever it was in *X is Y*, usually some kind of *is* of predication. In a way, it must therefore be in principle possible to separate the *is* of identity from the *is* of predication in such a simple statement. And the same analysis can be extended to more complicated constructions. And according to what was said earlier such an identificatory *is* specifies a substance [Hintikka (2006), p. 48].

I also concur with this proposal. Moreover, I believe that my analysis of the example I have repeatedly given ('a man sings') affords further evidence to support this hermeneutical approach. In fact, to my mind, 'a man sings' (as well as its logical equivalent 'a man is singing') can be spelled out in the following way:

*there is singing, which is been performed by someone who is a man,*

where we find three *ises*: the '*is*' of existence, the '*is*' of predication and the '*is*' of identification.

3. Let us now go on to the last of the three observations I mentioned with regard to Aristotle's conception of the verb. This refers to *the priority*

Aristotle gives to the present tense in its temporal co-signification. Immediately after defining the verb, Aristotle says:

And I say that it additionally signifies time, so that 'recovery' is a name, but 'recovers' is a verb, because it additionally signifies that it is holding *now* (τὸ νῦν ὑπάρχειν) [16b8-9].<sup>10</sup>

A little later his statement on this matter appears to become not only more explicit but also much more radical (I quote):

'Does not recover' and 'does not ail' I do not call verbs. For though they additionally signify time and always hold of something, yet there is a difference –for which there is no name. Let us call them *indefinite verbs*, because they hold indifferently of anything whether existent or non-existent. Similarly, 'recovered' and 'will-recover' are not verbs but inflexions of verbs. They differ from the verb in that it *additionally signifies* (προσημαίνει) *the present time*, they the time outside the present [Trans. Ackrill].

Here Aristotle clearly states that *only the present tense forms are properly verbs*. I will not here continue to analyze this Aristotelian proposal which I consider of considerable interest from both a grammatical and a philosophical point of view. Nevertheless, I would like briefly to recall a point concerning the senses and uses of the verb 'be' (εἶμι) in Greek, from Homer's language down to Greek philosophical language.<sup>11</sup> I refer to the fact that εἶμι originally connotes the notion of *presence*, and that 'to be' originally means *being there, being present*.

Thus it could be said that the Aristotelian thesis that a verb additionally signifies the present time is somehow connected to two relevant circumstances: (1) in the first place, it is related to the highly important fact that in Aristotle's philosophical and grammatical approach the verb 'be' is *not fully grammaticalized*. Not yet. It is more than a purely grammatical (or logical) mark, insofar as it retains certain features belonging to its own past (Indo-European) meaning. As I have said, the verb εἶμι connotes the notion of presence according to its old Indo-European origins; and (2) in the second place, the reference to the present tense appears to be connected to the fact that, according to Aristotle, *the most important verbal co-signification is the assertive* or the *thetic* one; that is, the affirmation of the presence, existence or actuality of that which is signified by the verb; and the idea of actualization is immediately expressed by the present tense in the indicative: ἔσται.<sup>12</sup>

### III

I would like to conclude my contribution with a brief reference to the question of Aristotelian categories.

I have emphasized that according to the Aristotelian conception of ver-  
 bality, any sentence with a verbal predicate (such as ‘a man sings’) can be  
 transformed into a copulative sentence with a nominal predicate (‘a man  
 sings’ can be transformed into ‘a man is singing’) *salvo sensu*. I wish to point  
 out that this Aristotelian thesis implies that *the verb ‘be’, εἶμι, has no mean-*  
*ing by itself*, since it has *only the additional meanings* belonging to ver-  
 bality as such. In other words, one could say that the semantic emptiness of ‘be’,  
 εἶμι, is eventually occupied or filled by the different meanings of the predi-  
 cates it introduces.

To my mind, this is one highly relevant approach in Aristotle’s *Meta-*  
*physics*, particularly in Book V, chapter 7, where Aristotle explains the plu-  
 rality of meanings of ‘be’. Since I cannot discuss the whole chapter, I will  
 focus on only one paragraph – the second paragraph – which deals specifical-  
 ly with categories. Let us examine the text:

Those things are said to be in their own right that are indicated by the figures of  
 predication; *for the senses of ‘being’ are just as many as these figures*. Since  
 some predicates indicate what the subject is, others its quality, others quantity,  
 others relation, others activity or passivity, others its place, others its time,  
 ‘being’ has a meaning answering to each of these. *For there is no difference*  
*between ‘the man is recovering’ and ‘the man recovers’, nor between ‘the man*  
*is walking’ or ‘cutting’ and ‘the man walks’ or ‘cuts’; and similarly in all other*  
*cases* [Trans. D.Ross].

In my opinion, this passage has traditionally been misunderstood both by an-  
 cient and contemporary commentators. I cannot argue extensively on this.<sup>13</sup>  
 However, let me suggest that any unprejudiced reading of this passage will bring  
 the reader to a realization of the following two points. In the first place, that the  
 ontological thesis stated here by Aristotle is that *categories as such* – by them-  
 selves: καθ’ αὑτά, in their own right, according to Ross’s translation – *constitute*  
*the main meanings of ‘be’, of εἶμι*. In the second place, that the only argument  
 or reason given by Aristotle in order to prove this ontological thesis is the al-  
 ready known fact that *there is no difference between ‘the man is recovering’*  
*and ‘the man recovers’, etc*. This implies, as I have already explained, that  
 the verb εἶμι does not signify anything by itself, and its meanings are there-  
 fore those afforded it by the predicates.

To my mind, this semantic emptiness is the main logical linguistic  
 ground for Aristotle to state that categories are meanings of being.

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## NOTES

<sup>1</sup> Also: "One more specific difference concerns the counterpart or counterparts in a logical notation to natural language verbs for being, such as the English *is*, the German *ist*, and the ancient Greek *estin*. With some exceptions, there has recently been a consensus to the effect that such verbs are multiply ambiguous between the *is* of predication, the *is* of existence, the *is* of identity, and the *is* of subsumption. The assumption of such an ambiguity will be called here the Frege-Russell ambiguity thesis, for indeed the currency of this assumption is due largely to these two logicians" [Vilkko and Hintikka (2006), p. 360].

<sup>2</sup> "In a way, it is not surprising the Aristotle did not uphold this Frege-Russell ambiguity claim. For to the best of my knowledge no philosopher before the nineteenth century assumed the ambiguity thesis. What I have slowly come to realize is that Aristotle may have been the only early philosopher who consciously considered the ambiguity thesis but rejected it" [Hintikka (1999), p. 782].

<sup>3</sup> On the Aristotelian conception of the verb and its philosophical import, cf. [Calvo (2005a)].

<sup>4</sup> It is generally agreed that Aristotle analyzes the nature of the verb more from a logical than from a grammatical point of view, which is certainly true. This is because he views the nature of the verb within the framework of an analysis of λόγος ἀποφαντικός, that is, of the kind of discourse which can be true or false. This is the very situation in *De Interpretatione*, where the Aristotelian conception of the structure of λόγος is substantially the same as the one proposed by Plato in the *Sophist* [261D-263D]. The main observation by both philosophers is that truth and falsity *can only happen in an articulated λόγος*, that is, in a λόγος which says (which affirms or denies) something about something. Thus, the structure of the λόγος ἀποφαντικός – of statement-making sentences – has its general formulation in the well-known formula τι κατὰ τινοσ: <to say> *something of something*, where the logical-grammatical categories of subject and predicate appear explicitly indicated. No doubt, these are logical notions. But they must also be considered as linguistic notions.

Aristotle designates them (that is, the subject and the predicate) by resorting respectively to the words ὄνομα (usually translated as "name"), and ῥῆμα (usually translated as "verb"). Although there are some textual problems which cannot be discussed here, I shall also always translate ῥῆμα as *verb*.

<sup>5</sup> This idea of *adding* is not as clearly indicated in translations of προσσημαίνειν to other languages. Thus, in Spanish this verb is usually translated as "cosignificar", from the Latin "consignificare".

<sup>6</sup> Traditionally – after the Greek commentators – it has been understood that Aristotle proposes this distinction between σημαίνειν and προσσημαίνειν (that is, between 'signifying' and 'additionally signifying') in order to distinguish verbs from other words like 'month', 'year', 'yesterday', etc.; that is, from words signifying time. Unlike these words signifying time, *verbs do not signify time, they add a reference to time to their meaning*. This is no doubt an acceptable comment on Aristotle's doctrine.

<sup>7</sup> These verbal functions may remain unfulfilled, as occurs when the verb is pronounced without any subject, as in the case '*knows*'. However, the demand for their fulfillment always remains formally indicated. Thus, the verbal form '*knows*' (1)

demands a *subject*, i.e., someone in relation to whom (2) one intends to *affirm* (3) the actual *existence of knowledge*.

On this, and on the related Aristotelian statement that “*when uttered just by themselves verbs are names*” (αὐτὰ μὲν οὖν καθ' αὐτὰ λεγόμενα τὰ ῥήματα ὀνόματά ἐστι: [16b19-20]), cf. Calvo (2005a).

<sup>8</sup> Furthermore, I consider that the other two additional cosignifications are based on this (on the assertive one). Thus, the verb additionally signifies the predicate function *because* what is meant by the verb (the ‘singing’ in the sentence ‘a man sings’) becomes actualized *in a subject*, in a man; and the verb additionally signifies time, insofar as this actualization takes place *at a given moment* in time.

<sup>9</sup> Observe that the Greek verb I am translating as “to take place” and “to exist” is ὑπάρχω which means either simply *to exist, to be there* without any further qualification, or *to exist in something, to belong to something*.

<sup>10</sup> Ackrill translates the last sentence: “it additionally signifies *something’s holding now*”. But this (“something’s”) either obscures or even misses the point. To my mind, the sentence refers to the “holding now” of *recovering*, not to the “holding now” of a vague (indeterminate) “something”.

<sup>11</sup> I have written more extensively on this in Calvo (2005b).

<sup>12</sup> As far as *the present time* (νῦν) is concerned, we must distinguish two different *nows*. (1) That of the speaker, and (2) that of actualization. This – the actualization or presence – always takes place *now, in a present*, which is *the now of the actualization*. Only *the present time of the speaker* will be taken into account by grammarians. (Cf. on this my previously quoted article: Calvo (2005a).)

(On the other hand, when the *presence* is assumed to be everlasting we have the so-called ‘atemporal present’, which distinguishes the Parmenidean ἔστι).

<sup>13</sup> A more detailed discussion on this can be found in Calvo (1991).

## REFERENCES

- AUBENQUE, P. (1991), ‘Herméneutique et Ontologie’, in Sinaceur, A.M. (ed.) (1991), *Penser avec Aristote*, Toulouse, Erès, pp. 93-105.
- CALVO, T. (1991), ‘La Fórmula *kath’auto* y las Categorías: A Vueltas con *Metafísica* V 7’, *Méthexis*, vol. 4, pp. 39-57.
- (2005a), ‘Temps Physique et Temps Verbal chez Aristote’, in Balaudé J.F. and Wolff, F. (eds.) (2005), *Aristote et la Pensée du Temps*, Université Paris X-Nanterre, pp. 79-97.
- (2005b), ‘El Verbo ‘Ser’ y el Desarrollo de la Filosofía Griega’, in *Actas del XI Congreso de la Sociedad Española de Estudios Clásicos I* (DL. M-4947-2005), SEEC, Madrid, pp. 253-274.
- HINTIKKA, J. (1999), ‘On Aristotle’s Notion of Existence’, *The Review of Metaphysics*, vol. 52(4), pp. 779-805. Also in Hintikka, J. (2004), *Analyses of Aristotle* (Selected Papers, vol. 6), Dordrecht, Kluwer Academic, pp. 1-22.
- (2006), ‘Ta Meta Ta Metaphysika: The Argumentative Structure of Aristotle’s Metaphysics’, in Hirvonen, V., Holopainen, T.J. and Tuominen, M. (eds.) (2006), *Mind and Modality: Studies in the History of Philosophy in Honour of Simo Knuuttila*, Leiden, Brill, pp. 41-53.

VILKKO, R. and HINTIKKA, J. (2006), 'Existence and Predication from Aristotle to Frege', *Philosophy and Phenomenological Research*, vol. 73(2), pp. 359-377.