



TWO ARISTOTELIAN THEORIES OF EXISTENTIAL IMPORT

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Resumen: Tal como es comúnmente presentada hoy en día, la lógica aristotélica es acusada de tener la deficiencia de hacer la suposición de existencia para todos sus términos sin establecerlo. Yo sostengo que, aunque esta versión de la lógica aristotélica, “la teoría copulativa”, prevalece hoy en día, no es la teoría de Aristóteles. Además, hay otra tradición aristotélica con una teoría diferente. Aquí presento las dos teorías, como formuladas por Tomás de Aquino y Avicena, y las comparo en relación al cuadrado de las oposiciones y la predicación metatética. Concluyo que una de las teorías, la del aspecto, funciona mejor y tiene cierta similitud con la actual teoría de la lógica libre.

Palabras clave: Aristóteles, santo Tomás de Aquino, Avicena, predicación, presuposición existencial.

Abstract: As commonly presented, Aristotelian logic is charged today with having the flaw of making an existential import assumption for all of its terms without stating it. I argue that, although this version of Aristotelian logic, “the copulative theory”, prevails today, it is not Aristotle’s theory. Moreover, there is another Aristotelian tradition with a different theory, more logically respectable and closer to Aristotle: the aspect theory. I present the two theories, as formulated by Aquinas and Avicenna, and compare them with respect to the square of opposition and metathetic predication. I conclude that the aspect theory works better and has some similarity to free logic today.

Keywords: Aristotle; Aquinas; Avicenna; predication; existential import.

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‘Existential import’ has become a fashionable phrase. Often it is used when modern logicians compare current theories with the Aristotelian tradition. The latter is said to have the flaw that it assumes that all of its terms have existential import when making inferences without making that assumption explicit. In contrast, today it is assumed that only certain logical forms of propositions imply that one or more of the terms used must have instances in the domain. The proofs go through whether or not the predicate terms in the propositions have existential import.

The most commonly given example of the Aristotelian flaw is the inference from a universal affirmative proposition (A) to the particular affirmative (I), from ‘every S is P’ to ‘some S is P’. On the modern symbolization only the I proposition asserts existence. Hence it does not follow from ‘every goat-stag is an animal’ that ‘some goat-stag is an

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animal'; 'every goat-stag is an animal' is true, even necessarily so, even when there are no goat-stags, while 'some goat-stag is an animal' is then false.

Various responses can be made. For one, perhaps the current symbolization of the A proposition, as $\forall x (Sx \rightarrow Px)$, is incorrect. Frege, Russell *et al.* introduced it as merely "convenient", as Russell puts it, in the context of an ideal language where each singular term has a unique referent and each predicate expression has a non-empty extension.²

But here I put aside such responses and work on the historical side, namely that the Aristotelian position need not be as silly as thought. Rather, it differs from what we suppose it to be. I claim that Aristotle himself and some others later on had a different view of predication according to which the existential import problem does not arise at all. To be sure, other Aristotelians did have a theory of predication with that problem. As the latter view, advocated by Thomists, has come to be the dominant representation of Aristotelian logic, it has made it look silly.

I. Aristotelian Predication Theories

The Aristotelian tradition has two main theories of predication, which I have called *the copulative theory* and *the aspect theory*.³ The latter has been largely ignored today. Let me sketch each theory.

Take a simple, declarative sentence, of form 'S is P'. On the copulative theory, its copula 'is' changes its logical function depending on its sentential context. In a statement of *secundum adiacens*, it makes an existence claim: 'S is' means that S is existent. In a statement of *tertium adiacens*, it connects the predicate term to the subject: 'S is P' means only that 'P' belongs to 'S', and makes no existence claim.

The copulative theory has dominated large portions of the Aristotelian tradition. Among others, Aquinas held it, and Thomist interpretations of Aristotle have had and continue to have great influence. Dominant and plausible though the copulative interpretation may seem, I have argued that the copulative theory is not Aristotle's. To hazard an historical guess, I think that the copulative theory may have come to dominate as a result of the neo-Platonizing interpretations of Aristotle's works by such as Proclus, Ammonius, and Boethius.

The aspect theory of predication, which I have located most clearly in Islamic Aristotelian philosophy, runs as follows: a statement of *secundum adiacens*, 'S is', makes an existence claim. A statement of *tertium adiacens* does so too: 'S is P' is to be read as 'S is existent as a P'. So, for example, 'Socrates is (a) man' is to be read as 'Socrates is existent as a man'; 'Socrates is just' as 'Socrates is existent as just'; 'every man is an animal' as 'every man is existent as an animal'; 'man is animal', taken as a

² As Russell (1957) states at the end of "Mr. Strawson on Referring."

³ Bäck (2000).

predication of genus of species, as ‘man is existent as animal’. On such a reading, even a seemingly simple predication will have compound truth conditions: e.g., the truth of ‘Socrates is existent as a man’ requires both that Socrates be existent and that Socrates be a man (i.e., that ‘man’ signifies one of the attributes of Socrates). The latter condition, that Socrates be a man, is not equivalent to the original predication to be analyzed; if it were, it would beg the question. Rather, in Aristotelian jargon, it could be expressed more strictly as ‘man is predicated (or: ‘belongs to’ or ‘is said’ (in a general sense)) of Socrates’.⁴ So, on this theory of predication even a simple assertion, of form ‘S is P’, is a disguised conjunction: ‘S exists and P is predicated of S’.

It was explicitly recognized already in Islamic treatments of the square of opposition that espoused this theory that the contradictories of simple predications, understood in this way, will be implicit disjunctions, and so have disjoint truth conditions, each of which suffices for the truth of the contradictory. So, ‘Socrates is not a man’, taken to be the contradictory of the simple affirmation, ‘Socrates is a man’, is equivalent to ‘it is not the case that Socrates is existent as a man’, and hence to ‘it is not the case that Socrates is existent and Socrates is a man’. Thus it was stated that for the truth of ‘Socrates is not a man’ either ‘Socrates does not exist’ or ‘man is not predicated of Socrates’ suffices.

I call this theory of predication *the aspect theory of predication*, as the predicate is supposed to stipulate a certain aspect of existence of the subject.

Who held this aspect theory explicitly? In later Greek philosophy, the texts are not decisive, but, in decreasing order of probability, some Stoics, Philoponus, and Theophrastus might have held it.⁵ This theory clearly had Islamic adherents. Among the philosophers of the Kalām, it was held that a statement of form ‘S is’ (*al-S kāna*) makes a claim of existence. Further, in a statement of form ‘S is P’ (in every case or with only some types of verbal complements), ‘P’ must be taken as an accusative specifying the state: ‘S is existent as a P’:

‘Zayd is knowing’ is to be read as “Zayd *is*...and that his *is*, insofar as it is stated in this proposition, is a being knowing. That he have an attribute is that he be qualified in his being by an attribute...i.e., that he be in some state.”⁶

Avicenna (Ibn Sīnā), following some combination of the Kalām, Philoponus, and his own genius, likewise analyzes ‘S is P’ into ‘S is existent, and P is an attribute of S’.⁷ With the simple denial, ‘S is not P’, Avicenna says, consistently, that it is true either if S does not exist or if P is not an attribute of S. He further distinguishes and lists, in line with the Greek commentators, the various ways in which the second condition, ‘man

⁴ Aristotle uses ‘said of’ (*λέγεται κατά*) thus of ‘is’ itself: *Metaphysics* 1003b1-5.

⁵ See Bäck (2000).

⁶ Frank (1978), p. 23; cf. p. 21.

⁷ *Al-‘Ibāra* 77,8ff.



does not belong to Socrates', could be satisfied. The fate of the aspect theory of predication theory in Latin medieval philosophy is less clear than in Islamic philosophy, but Ockham, Buridan, and De Soto are probable advocates.

I now propose to compare the copulative and the aspect theory in more detail. Here I shall concentrate on two cases: 1) subalternation, where in the square of opposition the particular affirmative (I) proposition is said to follow from the universal affirmative (A) proposition, and the particular negative (O) from the universal negative (E). 2) metathetic affirmations of the form 'S is not-P'. Each of these cases raises logical difficulties. To keep the discussion manageable I shall use the particular theories of Aquinas and Avicenna, as versions of the copulative and the aspect theory respectively.

II. Subalternation

Consider subalternation. As noted, the A to I inference looks suspect today because the universal affirmative statement might be true without there existing any instances of it. Why cannot 'all goat-stags are animals' be true even if there are not any goat-stags? To take a more scientific example, discussed in the Aristotelian tradition, take: 'all eclipses have occlusion of a light source'. This can be true even at a time when there are no eclipses, and, for us, even if the universe never came to have any stars or eclipses at all.

The E to O inference looks especially silly: 'No goat-stag is a rock' looks true; taken as 'if something is a goat-stag, it is not a rock', it is true on the modern analysis. Even in the Aristotelian tradition, the E statement is supposed to be the contradictory of the I statement. Then likewise it should be true, without existential import. For consider 'it is not the case that some goat-stag is a rock'. Why cannot that be true without there being any goat-stags: there does not exist something that is a goat-stag and a rock.⁸ Still 'some goat-stag is not a rock' looks false, if taken to claim that there exists something that is a goat-stag and not a rock.

There is no need to hold the E to O inference in order to defend Aristotle. He has the position that the A to I inference is valid. However, he neither sanctions the E to O inference explicitly nor uses it in his syllogistic. In *On Interpretation* he only takes the A and O, and the E and I, statements to be mutually contradictory (18a4-6; 20a18-20).

Aquinas does not discuss subalternation explicitly. However he seems to take it for granted as he is following Boethius. Boethius, conforming to the canons of Proclus, has the standard, textbook square of opposition, where subalternation holds from A to I and from E to O and where A and O, and E and I, are contradictories.⁹

⁸ Thus Aristotle, *Categories* 13b14-9, says that 'Socrates is healthy' and 'Socrates is ill' are both false when Socrates does not exist.

⁹ In *Librum Aristotelis De Interpretatione, Editio Prima*, 321B.

Like Aristotle, Aquinas takes a simple affirmation to affirm that what is *in re* is just as it is. So ‘Socrates runs’ states that Socrates is in fact running. The problem is that his analysis of the predication does not give this result.¹⁰

Aquinas takes statements of *secundum adiacens* to make assertions of real existence. But with those of *tertium adiacens*, where ‘is’ is additionally predicated in addition as a third thing, Aquinas takes ‘additionally predicated’ to mean not that ‘is’ is also predicated of the subject, but that ‘is’ is attached to the predicate complement, which is predicated of the subject:

“...it must be considered that, whenever ‘is’ is predicated in the assertion as something second, as when it is said, ‘Socrates is’: by this we intend to signify nothing other than that Socrates is in the nature of things. But, whenever it is not predicated *per se*, as if it were a principal predicate, but, as if conjoined to the principal predicate for connecting it to the subject, as when it is said, Socrates is white, the intention of the speaker is not to assert that Socrates in the nature of things, but to attribute whiteness to it by means of the verb ‘is’, and so in such ‘is’ is predicated as adjacent to the principal predicate. And it is not said to be third since it is a third predicate, but since it is a third expression put in the assertion, which, together with the predicated name, makes one predicate”.¹¹

¹⁰ (80379) *Expositio Peryermeneias*, lib. 1 l. 9 n. 3 Sic igitur quatuor modis potest variari enunciatio, secundum permixtionem harum duarum divisionum. Uno modo, quia id quod est in re enunciatum ita esse sicut in re est: quod pertinet ad affirmationem veram; puta cum Socrates currit, dicimus Socratem currere. Alio modo, cum enunciatum aliquid non esse quod in re non est: quod pertinet ad negationem veram; ut cum dicitur, Aethiops albus non est. Tertio modo, cum enunciatum aliquid esse quod in re non est: quod pertinet ad affirmationem falsam; ut cum dicitur, corvus est albus. Quarto modo, cum enunciatum aliquid non esse quod in re est: quod pertinet ad negationem falsam; ut cum dicitur, nix non est alba. Philosophus autem, ut a minoribus ad potiora procedat, falsas veris praeponeat: inter quas negativam praemittit affirmativae, cum dicit quod contingit *enunciare quod est*, scilicet in rerum natura, *non esse*. Secundo autem, ponit affirmativam falsam cum dicit: *et quod non est*, scilicet in rerum natura, *esse*. Tertio autem, ponit affirmativam veram, quae opponitur negativae falsae, quam primo posuit, cum dicit: *et quod est*, scilicet in rerum natura, *esse*. Quarto autem, ponit negativam veram, quae opponitur affirmationi falsae, cum dicit: *et quod non est*, scilicet in rerum natura, *non esse*.

¹¹ Aquinas (80480) *Expositio Peryermeneias*, lib. 2 l. 2 n. 2 II.2.2. “Circa primum duo oportet intelligere: primo quidem, quid est hoc quod dicit, *est tertium adiacens praedicatur*. Ad cuius evidentiam considerandum est quod hoc verbum est quandoque in enunciatione praedicatur secundum se; ut cum dicitur, Socrates est: per quod nihil aliud intendimus significare, quam quod Solcrates sit in rerum natura. Quandoque vero non praedicatur per se, quasi principale praedicatum, sed quasi coniunctum principali praedicato ad connectendum ipsum subiecto; sicut cum dicitur, Socrates est albus, non est intentio loquentis ut asserat Socratem esse in rerum natura, sed ut attribuat ei albedinem mediante hoc verbo, est; et ideo in talibus, est, praedicatur ut adiacens principali praedicato. Et dicitur esse *tertium*, non quia sit tertium praedicatum, sed quia est tertia dictio posita in enunciatione, quae simul cum nomine praedicato facit unum praedicatum, ut sic enunciatio dividatur in duas partes et non in tres.” (Aquinas, *in de Int.*) Cf. *S. T. I.3.4.ad 2; De Ente et Essentia* 29,13-6.



Here Aquinas makes ‘is’ have only the copulative function in a statement of *tertium adiacens*, whereas ‘is’ has only the existential function in a statement of *secundum adiacens*. So Aquinas has a copulative theory of predication. In presenting it, he distinguishes sharply the ‘is’ of existence and the ‘is’ of predication: ‘is’ is ambiguous, as it has these two uses.¹²

To be sure, this move may be an advance in logical theory.¹³ But it has its problems as an interpretation of Aristotle’s texts or as a doctrine to be embraced along with other of Aristotle’s doctrines. It is hard to see how this theory of predication will give existential import even to the affirmative propositions of *tertium adiacens*. Why, on this theory, must ‘all goat-stags are animals’ imply that goat-stags exist and that some goat-stag is an animal?

Perhaps then Aquinas requires all terms used to have existential import. Propositions containing non-referring terms are false. Similarly, Aristotle had said that ‘Socrates is healthy’ and ‘Socrates is sick’ are both false when Socrates does not exist. (*Cat.* 13b14-8).

Aquinas takes ‘every S is P’ (*omnis homo est albus*) to have ‘not every S is P’ (*non omnis homo est albus*) as its contradictory. Likewise ‘no S is P’ (*nullus homo est albus*) and ‘some S is P’ (*quidam homo est albus*) are contradictories.¹⁴

¹² *Quodl.* XII, 1 ad 1: “*Esse dupliciter dicitur: quandoque enim esse idem est quod actus entis; quandoque autem significat compositionem enuntiationis; et sic significat actum intellectus...*” Cf. *In I Sent.* 19.5.1 ad 1; *In III Sent.* 5; 7.1.1; *S. T.* I.39. 6 ad 2; I.39.5 ad 4; *De pot.* q7.a2.ad 2.

Pannier and Sullivan (1993), pp. 159-60, understand Aquinas to say at *Metaphysicorum Aristotelis Expositio* V.1.ix n. 895, that something has being as truth “only if it can be made the intended subject of at least one statement, whether it be affirmative or negative.” But, judging by the examples of *Metaphysics* V.7, the “statement” needs only being *per accidens*. Even they hedge on their example, ‘the pink rabbit on the corner does not exist’, and claim that the pink rabbit is not the logical subject.

Weidemann (1981), pp. 753-6, takes the two senses as being in act and being the value of an existential quantifier respectively. The latter amounts to being *per accidens*: e.g., to say that blindness is *per accidens* amounts to asserting that there exists someone who is blind. Cf. Kenny (1969), p. 82; also Anscombe and Geach (1973), pp. 90-1. Pannier and Sullivan (1993), pp. 157; 163, attack Weidemann and Geach on the grounds that their Frege-style exemplification cannot handle singular statements with say ‘Socrates’ as subject—but clearly it can (by defining ‘E!a’ as ‘ $\exists x (x = a)$ ’).

¹³ Angelelli (1967), pp. 52-3.

¹⁴ (80413) *Expositio Peryermeneias*, lib. 1 l. 11 n. 3 Dicit ergo primo quod enuntiatio, quae universale significat, scilicet universaliter, opponitur contradictorie ei, quae non significat universaliter sed particulariter, si una earum sit affirmativa, altera vero sit negativa (sive universalis sit affirmativa et particularis negativa, sive e converso); ut cum dicitur, omnis homo est albus, non omnis homo est albus: hoc enim quod dico, non omnis, ponitur loco signi particularis negativi; unde aequipollet ei quae est, quidam homo non est albus; sicut et nullus, quod idem significat ac si diceretur, non ullus vel non quidam, est signum universale negativum. Unde hae duae, quidam homo est albus (quae est particularis affirmativa), nullus homo est albus (quae est universalis negativa), sunt contradictoriae.

He takes ‘some S is not P’ to be equivalent to ‘not every S is P’. Presumably then likewise the contradictory of ‘some S is P’ will be ‘not (some S is P)’, as equivalent to ‘no S is P’.¹⁵

But then it would seem that ‘some goat-stag is an animal’ is false. Then its contradictory should be true: for Aquinas this is: ‘no goat-stag is an animal’. But E implies O, and hence ‘some goat-stag is not an animal’ should be true. But there are not any goat-stags. Or, even worse: assume that O proposition to be false. Then its contradictory, ‘every goat-stag is an animal’ should be true. But then its subaltern, ‘some goat-stag is an animal’ should be true.

Should then existential import be a background condition, as in the theory of Strawson, so that we limit formal logic only to referring terms? A proposition containing a non-referring term would then be meaningless or ill-formed. Yet ‘some goat-stag is an animal’ does not seem meaningless; we even know what would make it true. Sometimes we do not know whether a term refers or not; maybe there are goat-stags. (After all, these days there are geeps: sheep-goat chimeras.) Anyway, Aquinas needs to have logic to apply to non-referring terms, if he wants to allow for God to think about whether or not to create goat-stags. Aristotle himself has discussions where he uses his logical apparatus on non-referring terms: *On Interpretation* 11 discusses inferences involving ‘Homer is a poet’ and ‘not-being is’—the latter being an instance of an indefinite name, which Aristotle discusses extensively in Chapter 10. Moreover he wants to apply his logic to analyze the arguments of sophists. This seems a mess.

Avicenna. On Avicenna’s version of the aspect theory, likewise the E and O propositions should be taken as the contradictories of the I and A propositions, as Aristotle himself had stated. The A proposition has the truth conditions: ‘there exists an S and P is predicated of every S’. Hence its denial, the O proposition, should be understood as:

‘not (every S is P)’, which has the truth conditions:

Either there does not exist an S or it is not the case that P is predicated of every S.

(The second disjunct can be taken to have existential import. Then it becomes:

¹⁵ (80423) *Expositio Peryermeneias*, lib. 1 l. 12 n. 2: “Sed si quis recte consideret huius affirmativae, omnis homo est albus, negativa est sola ista, quidam homo non est albus, quae solummodo removet ipsam, ut patet ex sua aequipollenti, quae est, non omnis homo est albus. Universalis vero negativa includit quidem in suo intellectu negationem universalis affirmativae, in quantum includit particularem negativam, sed supra hoc aliquid addit, in quantum scilicet importat non solum remotionem universalitatis, sed removet quamlibet partem eius. Et sic patet quod sola una est negatio universalis affirmationis: et idem apparet in aliis.”



‘some S is not P’.) The I proposition has the truth conditions: ‘there exists an S and P is predicated of some S’. Hence its denial, the E proposition, should be understood as:

‘not (some S is P)’, which has the truth conditions:

Either there does not exist an S or it is not the case that P is predicated of some S.

(The second disjunct can be taken to have existential import. Then it becomes: ‘no S are P’). The A to I and the E to O inferences follow, semantically, on these truth conditions. The inferences are obvious and have no hidden assumptions.

Neither E nor O propositions have existential import—unless that be stipulated as an additional assumption. Avicenna, like Aristotle, may make this special assumption in scientific contexts: of demonstrations and of a syllogistic whose intended application is to demonstration. For in Aristotelian demonstration, the terms must refer to real things. Hence Aristotle says that the first thing to ask in a scientific investigation of S is whether or not S exists. (*An. Po.* I.1; II.1) Yet, even so, Aristotle never uses the E to O inference in proving his syllogisms.

If we symbolize this analysis in modern terms, subalternation becomes valid. Symbolize ‘P is predicated of S’ as: $\forall x (Sx \rightarrow Px)$. The E proposition becomes: $(\neg \exists x Sx \vee (\exists x Sx \wedge \forall x (Sx \rightarrow \neg Px)))$. (Some current systems of free logic come close to this.) This account of subalternation does not seem a mess.

II. Metathetic Predication

Consider now metathetic predication, where the negation taken with a predicate ‘P’ forms a complex predicate, of the form ‘not-P’. Aristotle says that such an indefinite or metathetic name, ‘not-P’, holds of the existent and the non-existent (*Int.* 16a29-31; 16b11-5). A simple statement, of form ‘S is not-P’, is then an affirmation, with ‘not-P’ being predicated of ‘S’.

Hence ‘a goat-stag is a not-man’ should be true, even though no goat-stags exist. Aristotle says that such a statement is an affirmation. The problem is that, since this is affirmative, its subject seems to exist (*Int.* 19b22-6). Moreover consider ‘every goat-stag is a not-man’. This seems true. Yet it implies ‘some goat-stag is a not-man’. Hence metathetic affirmations seem to have existential import.

Here, taken as an interpretation of Aristotle, a copulative theory of predication might seem to have the advantage—if, according to it, the ‘is’ merely connects up the subject and predicate. Then ‘every goat-stag is a not-man’ can be true without any goat-stags existing. It likewise might be nice to hold that ‘every

goat-stag is a goat-stag' is true.¹⁶ But then the A to I subalternation becomes invalid.¹⁷ Moreover such an account seems inconsistent with holding that the subject of a (true) affirmation must have existential import.

Aquinas has the usual account of indefinite names and verbs:

For it is imposed from the negation of man which is said equally of being and not-being. Whence too not-man can be said indifferently both of what is not in the nature of things, as if we said, 'a chimera is not-man', and of that which is in the nature of things, as if it is said, 'a horse is not-man'. Moreover, if it be imposed from a privation, the subject would at least be required to exist; but since it is imposed from the negation, it can be said both of being and not-being, as Boethius and Ammonius say.¹⁸

So Aquinas takes an indefinite name, 'not-P', to describe whatever is not P, i.e., to describe the complement of P. He holds that 'not-man' is said of things that do not exist, like chimeras, as well as of some things, like horses, that do exist. Aquinas says that 'a chimera is not-man' is true. So here he seems to say that the truth of the metathetic affirmation does not require its subject to exist.

Aquinas' claim that in a statement of *tertium adiacens* the copula 'is' serves only to connect subject and predicate and makes no existence claim should entail for him that a metathetic affirmation by itself has no condition of existential import. For a metathetic affirmation is a statement of *tertium adiacens*. Moreover, what is being predicated is an indefinite name. However he has said otherwise about the square of opposition.

Aquinas clearly is aware of the difficulties of *On Interpretation* 10, as he cites the differing interpretations raised by Boethius. Giving his own view, he says:

"...the statement, 'man is just', for example, is related to all those of which in any way 'is a just man' can be truly said. And similarly, the statement, 'man is not just', is

¹⁶ With Abelard, 'the chimera is a chimera' became a standard sophism. Cf. *Dialectica* 139, 26-142,14; 123,15-25; 130-131. Cf. *Glossae super Peri Hermenias* 348,37-351,23. Tweedale (1976), pp. 291; 227; Ebbesen (1986), pp. 122-31.

¹⁷ Aristotle takes an indefinite proposition, like 'a goat-stag is a not-man' as equivalent either to a universal or to a particular proposition.

¹⁸ (80316) *Expositio Peryermeneias*, lib. 1 l. 4 n. 13: "Imponitur enim a negatione hominis, quae aequaliter dicitur de ente, et non ente. Unde non homo potest dici indifferenter, et de eo quod non est in rerum natura; ut si dicamus, Chimaera est non homo, et de eo quod est in rerum natura; sicut cum dicitur, equus est non homo. Si autem imponeretur a privatione, requireret subiectum ad minus existens: sed quia imponitur a negatione, potest dici de ente et de non ente, ut Boethius et Ammonius dicunt." (trans. Oesterle (1962), p. 41); cf. *S. T. I.17.4*. See Bäck (2003).



related to all those, any of which it can be truly said that it is not a just man. According to this mode of speaking it is therefore evident that the simple negative holds in more cases than the indefinite affirmative that corresponds to it. Thus that he be a not-just man can truly be said only of any man who does not have the habit of justice, but that he not be a just man can be said not only of a man not having the habit of justice, but also of what is not a man at all. For example, this is true: ‘the log is not a just man’, but still this is false: ‘the log is a not-just man’. And so the simple negative holds in more cases than the indefinite affirmative, just as animal holds in more cases than man, since it is verified of more.”¹⁹

Like Ammonius and Boethius, Aquinas turns the examples given as statements by Aristotle into predicates; e.g., ‘man is just’ becomes the predicate ‘is a just man’; the metathetic ‘man is not-just’ becomes ‘is a not-just man’. (Aristotle uses an unusual word order suggesting this.) Aquinas then considers of what things such predicates are true. He says that the simple denial, ‘is not a just man’ is true of anything that is not a man and of any man that is not just, like a log. In contrast, the metathetic affirmation, ‘is a not-just man’ is true only of those men who are not just.

Aquinas is reading the categorical statement as having the form ‘___ is S-P’, and then considers what subjects this predication holds true.²⁰ So he is taking ‘S is P’ to make a complex predication of an unnamed subject. E.g., [X]

¹⁹ Aquinas (80487) *Expositio Peryermeneias*, lib. 2 l. 2 n. 9: “Ad cuius evidentiam considerandum est quod, sicut ipse dicit, enunciatio aliqua virtute se habet ad illud, de quo totum id quod in enunciatione significatur vere praedicari potest: sicut haec enunciatio, homo est iustus, se habet ad omnia illa, de quorum quolibet vere potest dici quod est homo iustus; et similiter haec enunciatio, homo non est iustus, se habet ad omnia illa, de quorum quolibet vere dici potest quod non est homo iustus. Secundum ergo hunc modum loquendi, manifestum est quod simplex negativa in plus est quam affirmativa infinita, quae ei correspondet. Nam, quod sit homo non iustus, vere potest dici de quolibet homine, qui non habet habitum iustitiae; sed quod non sit homo iustus, potest dici non solum de homine non habente habitum iustitiae, sed etiam de eo qui penitus non est homo: haec enim est vera, lignum non est homo iustus; tamen haec est falsa, lignum est homo non iustus. Et ita negativa simplex est in plus quam affirmativa infinita; sicut etiam animal est in plus quam homo, quia de pluribus verificatur. Simili etiam ratione, negativa simplex est in plus quam affirmativa privativa: quia de eo quod non est homo non potest dici quod sit homo iniustus. Sed affirmativa infinita est in plus quam affirmativa privativa: potest enim dici de puero et de quocumque homine nondum habente habitum virtutis aut vitii quod sit homo non iustus, non tamen de aliquo eorum vere dici potest quod sit homo iniustus. Affirmativa vero simplex in minus est quam negativa infinita: quia quod non sit homo non iustus potest dici non solum de homine iusto, sed etiam de eo quod penitus non est homo. Similiter etiam negativa privativa in plus est quam negativa infinita. Nam, quod non sit homo iniustus, potest dici non solum de homine habente habitum iustitiae, sed de eo quod penitus non est homo, de quorum quolibet potest dici quod non sit homo non iustus: sed ulterius potest dici de omnibus hominibus, qui nec habent habitum iustitiae neque habent habitum iniustitiae.” Cf. Boethius, *Editio Secunda* 424D; *Editio Prima* 303C-D; *Editio Prima* 308C-D; cf. *Editio Secunda*, 429B.

²⁰ Boethius, *Editio Secunda* 531C-540A.

is a just man' asserts both that X is just and that X is a man. Thus, the metathetic affirmation, 'X is a not-just man', asserts that X is not-just and that X is a man. So it will hold only of those existent humans that are not-just, i.e., that are not just for whatever reason. For civilized, normal human beings, being not-just amounts to the privative 'unjust', but not so for boys or barbarians, who are not in the moral sphere in actuality.²¹ However, the simple denial, 'X is not a just man' asserts that S is not both just and a man; i.e., that either X is not just or X is not a man.

So the simple denial will hold of what exists but is not a man, like logs, and of what exists as a man but is not just. It *would* hold also of what does not exist at all, like goat-stags, *if* there were no existential import condition. Aquinas says only that the simple denial holds of "what is not a man at all". So perhaps Aquinas does not want an existential import condition here. However he seems to, as seen in his account of subalternation and as attested by the later Thomist tradition.²²

But this position looks inconsistent with holding that an indefinite name holds of the existent and of the non-existent. Why is not 'a goat-stag is not-just' true?

Aquinas might reply that 'not-man' by itself holds of what does not exist. 'A goat-stag is not-just' though is not a real, *per se* statement, but only one *per accidens*, like 'Homer is a poet'.²³ Taken as a complex predicate, it becomes: '—is a non-just goat-stag' and is not true of anything—of anything existing *in re*, that is.

If Aquinas dropped the existential import assumption for denials, he might have a better explanation why the metathetic affirmation has existential import for its subject, whereas the simple denial does not. The simple denial would be true if either the subject does not exist or if the predication does not hold. The metathetic affirmation would make an existence claim, implicitly. (If it made it explicitly, this would be an aspect theory). But note that, apart from just stipulating existential

²¹ Klima (1996), p. 124, takes this account to give Aquinas an aspect theory of predication: "Just as in "ordinary predications" we can attach various qualifications to the predicate, so these "ordinary predications" themselves may be regarded as various qualifications of the predications of being. According to this analysis, therefore, when we say, 'man is blind', this is equivalent to saying, 'A man's blindness is' which in turn, is equivalent to saying, 'A man is with respect to his blindness'." Cf. *Sentences* II.34.1.1.

²² Aquinas never makes it too clear whether he thinks that the simple denial has existential import; after all his commentary breaks off in the middle of Chapter 10, and Cajetan continues. Yet above I have noted that Boethius requires existential import for denials as well. This is the usual view taken by the Thomist tradition. Cf. McCabe (1960), "Categories," pp. 80-3.

²³ I say that he "might" say this, as he never does comment on *On Interpretation* 11.



import, the reason for this lies in there being a complex predicate: it is because ‘man’ is predicated of the subject, not because ‘not-just’ is predicated of the subject, that the subject must exist for this metathetic affirmation to be true.

In this way then Aquinas is able to maintain both that indefinite names and verbs may be said of the existent as well as of the non-existent while holding that the metathetic affirmation holds only for existent subjects. But he accomplishes this at the cost of limiting what Aristotle says about statements to existent subjects. For it is the subject term in the original statement that gives the existential import. To see this, let us convert Aquinas’ metathetic predicate, ‘is a not-just man’, back into the original statement, ‘man is not-just’. Here the predication of ‘not-just’ does not make any existence claim by itself. At best, the presence of ‘man’ grounds the requirement of existence. Again consider ‘a goat-stag is not-just’. It is true, given that ‘is’ has merely a copulative function, but makes no existence claim. Likewise, the complex predicate, ‘is a not-just goat-stag’, should not belong only to existent subjects.

The only way I can see for Aquinas to dredge an assertion of existence out of ‘man is not-just’, while not requiring it for all metathetic affirmations, is to appeal to the content of the subject term, e.g., ‘man’. For the predicate is an indefinite name, and Aquinas holds that an indefinite name like ‘not-just’ may be said indifferently of what does and of what does not exist. He has said that ‘a chimera is non-existent’ is true, and also linked indefinite verbs with simple negations and not with privative predicates.

Further, as Aquinas holds that the copula ‘is’ in a statement of *tertium adiacens* serves only to link subject and predicate, he has eliminated the option of its making the existence claim. Nor does Aquinas give any indication how the copula, as the “verb” in a statement of *tertium adiacens*, will additionally signify time, and so perhaps provide a sentential context that might produce an existence claim. In short, Aquinas’ theory does not support Aristotle’s text nor his own claim that a metathetic affirmation applies only to what exists, and is not equivalent to a simple denial. So Aquinas has not managed to show that a metathetic affirmation requires that its subject exist. At best he can appeal only to the material content of the subject term (‘man’), and not on the formal structure of a metathetic affirmation.²⁴ But

²⁴ Weidemann (1986), pp. 189-91.

this will hardly do in formal logic.²⁵ Having a subject in a category of being *per se* might be required to make an existence claim true, but it is not required for making an existence claim. Another mess?

It is well known that Aquinas stopped writing this commentary in the midst of chapter 10 of *On Interpretation*. The usual reason given is that he was busy and that the student, for whom he was writing the commentary, wished to digest what he had been given before presuming to ask for more. Perhaps, on the other hand, Aquinas realized the mess that he had inherited and was trying to support. So perhaps not only St. Thomas's approaching beatitude but also his philosophical rectitude prevented him from continuing.²⁶

The probable source for these views of Aquinas is Boethius' commentary on *On Interpretation*, or some commentary upon it, and secondarily the commentary of Ammonius.²⁷ I find it odd that Aquinas did not use the more modern sources available to him: Albert or Averroes. Perhaps he forsook his more usual modern sources because, after all, he was writing merely a commentary for a beginning student. But then we should not take this commentary too seriously in logical theory.²⁸

Perhaps Aquinas, although citing Aristotle's views, is moving away from them. For, in his commentary on *Metaphysics* V.7, he seems to offer a different version. He sees the main point of the chapter to offer a distinction between two

²⁵ Perhaps Aquinas means his interpretation as a type of exposition (*ekthesis*), as used in the syllogistic. We are to take the indefinite proposition, 'man is not-just', and then consider what objects could make it true or false. As neither a horse (Boethius' example) nor something non-existent is a not-just man, the metathetic affirmation cannot be true of the non-existent. But, again, the trouble is that the subject term is 'man', and the restriction to the existent follows only from the content of the subject term. Zimmermann (1967) presents a later view following Aquinas: a term like 'man' must refer to a universal abstracted from individuals *in re*, and hence the statement is not true, p. 186,55-8. So the existence of the subject is presupposed, p. 197. If no man exists, 'man is animal' is true means only that the concept man is the concept animal, p. 190. Klima (1996), pp. 127-36, has an extended discussion of Aquinas' (or a Thomistic) analysis of the inference from *tertium adiacens* to *secundum adiacens*. In any case, his discussion goes far beyond Aquinas and has some peculiar conceptions, e.g., of "a formal rule of inference", p. 129: "Even if an inference is not valid in its form, nothing prevents it from being valid on the basis of the actual meanings of its terms."

²⁶ More seriously, Aquinas may have had other non-logical motives to take the position he does: Robert Kilwardby in 1277 condemned at Oxford the claim that the simple denial entails the metathetic affirmation even when the subject does not exist ('S is not P (and there does not exist an S); therefore S is not-P'). To be sure, Aquinas had died by then, but still, given bureaucratic delays, it is likely that those who did not give existential import to the metathetic affirmation would have been held suspect earlier. See Lewry (1981).

²⁷ Boethius, *In Librum De Interpretatione Editio Secunda* 532C; cf. 535A. Boethius seems to be following Ammonius, in *De Int.* 161,35-162,5. Soreth (1972), p. 394, n. 20, agrees that Aquinas is unusual in following Boethius and Porphyry, whom most Stoics followed too here.

²⁸ Unlike McNerny (1986) and Gilson (1952).



modes of being, the actual being (*actus essendi*) of real existence, and the alethic being of what *is* asserted, which he characterizes as what has the potential to exist and so being conceivable, exists *in intellectu*. He seems to equate the former with being *per se* and the latter with being *per accidens*.²⁹ So when ‘is’ is used to connect predicate to subject, it need have existence only *in intellectu*. So statements of *tertium adiacens* have no existential import. Now Aquinas generally takes the metathetic predicate, ‘not-P’, as equivalent to the privative.³⁰ As only actual subjects that can have the positive attribute (sight) can have the privation (blindness), accordingly privative, and hence metathetic, predications can apply only to what exists.³¹ In this way Aquinas gets existential import for affirmations of *tertium adiacens*.

But all this does not help much for interpreting Aristotle. Not only can Aquinas now not explain texts of Aristotle concerning the indefinite name and verb, but also now he cannot explain how it is possible to speak of what cannot exist at all, as the doctrine being *per accidens* was supposed to do.³² In particular he would be limiting the syllogistic to terms designating only things that actually exist. Logical inference would hold only for referring expressions.

However, on account of the dominance of Thomism among modern scholastics and medievalists, Aquinas’ logical views have come to have considerable importance today in Aristotelian logical theory, so much so that ridiculing Aquinas’ logical views for many today amounts to rejecting Aristotle’s too. E.g., Peter Geach has accused Aquinas of being an ancestor of the hated “two-names” theory of predication, whereby the copula asserts an identity between subject and predicate: ‘S’ and ‘P’ name the same object.³³ Geach has ridiculed this “two-name” theory of predication.³⁴ He does this mostly because he holds Frege’s view that predicates and subjects have radically different logical structures. To be sure, Aquinas does

²⁹ *In Metaphysica* V.9 (896). Weidemann (1981), pp. 755-6.

³⁰ *S.T.* I.5.2 ad 2.

³¹ *De pot.* 7.2 ad 1.

³² We might save Aquinas’ position by way of an extended sense of modality, so that a goat-stag *can* exist, and so have being *in intellectu*. But this again moves us further away from Aristotle.

³³ Geach (1974), p. 30, complains that “the theory that a true predication is effectively joining two names of the same thing or object, the copula being a sign of this real identity” is logically worthless, for try ‘David is the father of Solomon’. He accuses, p. 47, the theory of confusing a name with the bearer of the name. However, he too, p. 42, likes Aquinas’ theory to the extent that it distinguishes different logical structures represented by ‘is’.

Veatch (1960), p. 419, likes Aquinas’ theory and defends it against Geach. He rightly complains, p. 406, n. 16, that Geach attacks Aquinas’ “two name” theory too rhetorically. Veatch might be right, n. 17, that the difference lies in Geach’s not allowing the predicate to refer to objects.

³⁴ Geach (1962), pp. 34-6; Weidemann (1986), pp. 182; 188.

make some remarks like this.³⁵ Still, this theory looks later and more nominalist, as with Ockham and Buridan. For Aquinas's theory has the predicate being not 'P' but 'is P', which signifies the essence of P. Scotus will make this clear.³⁶ But Aquinas does suggest at times that the copula does signify the existence, but perhaps only *in intellectu*.³⁷ So, like Frege somewhat, Aquinas does give subject and predicate a different logical structure. But, even if we ought to reject Aquinas' views, the rejection of Aristotle's theory does not follow.

The aspect theory of Avicenna seems to have the same problem: how to assert that 'a goat-stag is a not-man' is true, while 'a goat-stag exists' is false? For the former statement is an affirmation and so has the truth conditions: 'there exists a goat-stag, and 'not-man' is predicated of (that) goat-stag'.

Avicenna has two main responses. First he sometimes avails himself of the standard doctrine that there are two types of existence: existence *in re* and existence *in intellectu*—or being *per se* and being *per accidens*. Already Plato had Socrates invoking an ancestor of the latter, when he explains how we can think of what is not and assert such false statements as 'Theaetetus flies'. Likewise for Aristotle 'goat-stag' and 'chimera' are names signifying something existing in the soul, a thought in the mental language. Thus Avicenna too says that 'a goat-stag is a not-man' is true, if the existence is taken to be only *in intellectu* and not *in re*.

Avicenna however does not mind saying that Aristotle is just wrong—or at any rate that his text make false claims, as Aristotle might be hiding his real views. So then just take 'a goat-stag is a not-man' to be false, in the usual sort of existence, *in re*, as there aren't any goat-stags. Likewise 'Homer is a poet' is false today, even if Homer did exist once. After all we would reject and dismiss such claims in science.

If you want to make such statements true, strictly and scientifically, Avicenna says, you can use the Aristotelian doctrine of phantasms, actual items in existing minds. People today have thoughts of Homer and his poetry; hence these thoughts actually exist. 'Homer is a poet' is true if taken to mean: there are some present thoughts of Homer today. Likewise 'a goat-stag is a not-man' is true if taken

³⁵ *S.T.* I.13.12. Cf. I.85.5 ad 3; *In V Met.* 11, n. 908. Aquinas offers this generally as the structure of *per se* predication. See Aertsen (1988), pp. 54-8, who summarizes Aquinas on *Metaphysics* V.7: a predicate *per se* indicates a causal relation (*In V Met.* Lect. 9, 885ff.); i.e. a formal necessary identity between subject and predicate (*De Pot.* 8,2, ad 6; *In III Sent.* 12,1,1 ad 6). Also Schmidt (1966), pp. 230-1.

³⁶ *In Primum Librum Perihermenias Quaestiones* 193b; Bos (1987), p. 126.

³⁷ *In I Sent.* 19.5. Perhaps, because of the present existence of the mind, the copula can come to con-signify time.



to describe actual thought of goat-stags. Ockham has a similar doctrine. So does Russell in his account of knowledge by description.

Avicenna's theory has another complication, that scientific statements may make statements in a timeless way, independently of the existence of any instances. In this way statements like 'all eclipses have occlusion of a light source' can be true even when there are no eclipses. For him their truth value is grounded on relations between quiddities in themselves. Here though it would seem that the A to I inference does not hold—unless there is a scientific, demonstrative context granting the presence of instances.

For instance, he says that 'a phoenix is a phoenix' or 'a heptagonal house is heptagonal' is true even when none exist. For certainly, like goat-stags, phoenixes and heptagonal houses are possible even if none exist ever. Such statements can be taken to be about the relation of essences of such possible beings. Just as 'human being' has the definition of 'rational animal', on account of the relationship between the quiddities humanity, rationality, and animality in themselves, so too for these statements about the goat-stag, phoenix, and heptagonal house.

In more modern terms, this amounts to ampliating the domain to a domain of all possible beings and moving from a categorial to a modal logic. Then there will be true statements about goat-stags *et al.*, whether the universal predicates have instances, in some possible world, albeit not in this world. Avicenna's metaphysics of necessary and contingent being supports such an amplified domain.

Still for such statements to be admitted into scientific, demonstrative discourse, the terms must have instances existing *in re*, in this world, and not in some possible world. Or does Avicenna allow that necessarily true statements can be admitted into scientific discourse without such existence *in re*? He doesn't say too much.³⁸ I surmise: perhaps so. This would explain, for instance, how in mathematics we can have a geometry of chiliagons, without any every really existing.

III. Conclusions

...there are existential presuppositions embodied in the usual system of quantification theory. These presuppositions go far towards explaining the uneasiness of the logicians about empty terms. They have to be explained away before the logicians are able to apply their formal constructs to oral discourse.³⁹

³⁸ However cf. Avicenna, *Al-Jadal* 235,2-5.

³⁹ Hintikka (1959), p. 130.

What may we conclude? The charge of having an implicit yet unrecognized assumption of existential import applies to the copulative theory of predication, but not to the aspect theory. The aspect theory fares better with subalternation and, perhaps, with metathetic affirmation. Still it has the drawback that syllogistic proof becomes much more complex: no longer do the antepredicamental rule and the *dicta de omni et de nullo* hold solely in virtue of the predication relation of belonging. This does not become a big problem for the intended interpretation of Aristotle's syllogistic: its application to demonstrative science, where existence *in re* is stipulated to hold for all terms. Then the existence claim drops out or, indeed, becomes a background, implicit assumption. Once this happens, the copulative and the aspect theory look quite similar, perhaps disagreeing on the E to O inference. Yet they still differ in the formal logic proper. There, the aspect reading yields explicit albeit unwieldy propositions. That may seem quaint. But, it turns out, even today we have come to a similar theory with free logics.

An aspect theory has reappeared in some versions of free logic, a logic "free of existence assumptions with respect to its general *and* its singular terms."⁴⁰ Free logic developed as a correction or emendation of classical Frege-Russell logic. The latter has problems handling existence claims about singulars: any existence claim about a singular thing is not well formed. E.g., it rejects 'Pegasus does not exist' and 'Homer exists' as nonsense ($*\neg\exists xp$; $*\neg\exists xh$).⁴¹ To admit them at all, classical logic had to use roundabout methods, like taking some terms, especially the non-referring terms, as disguised definite descriptions ('the winged horse') or sets ('the set of space-time points comprising Homer') or predicate functions ('Pegasizes'). Classical logic has further problems when mixing existential quantification with identity. E.g., 'a = a' (like 'Pegasus is Pegasus') looks true even if 'a' does not refer, but then, via the Existential Generalization (EG) rule, ' $\exists x (x = x)$ ' makes an existence claim for a singular that need not be in the domain.⁴² Likewise, what to do with predicate functions like 'x is the same as t', when 't' does not refer?

As mentioned, there are various ways to handle denials of the existence of individuals, like 'Socrates does not exist', in classical logic. We might have a

⁴⁰ Lambert (1991), p. 6.

⁴¹ Frege (1952), p. 50: "The sentence 'There is Julius Caesar' is neither true nor false but senseless." Classical logic has some other versions that may make it less problematic, in particular, those that treat the existential quantifier not as asserting existence but as asserting that the propositional function is sometimes true. Cf. Ludwig Wittgenstein, *Notebooks, 1914-1916*, 9.7.16: "Do not forget that $\exists x Fx$ does not mean: there is an x such that Fx, but that there is a true proposition 'Fx'."

⁴² Leblanc and Hailperin (1982), p. 17. Russell (1919), pp. 203-4, recognize this flaw. Note, as discussed above, that the same problem arises routinely in Aristotelian logic: 'the chimera is a chimera'.



domain of unreal objects, like existence *in intellectu* in addition to the normal domain of real objects. We might say that, while the “meaning” of a singular proposition (in the formal model) does not require existence, its use presupposes it. Or, we might follow Russell and Quine and replace all singular terms with descriptions or predicate functions, and thereby eliminate a subject-predicate ontology and embrace a “Platonism”. We might add on an existence predicate, and then wonder what the existential quantifier is doing. Or, we might amplify the domain to include all possible objects. Yet all this comes at the cost of weakening the robust sense of reality where individual substances have attributes.

Classical logic is supposed to be an advance from Aristotelian logic (i.e., in its modern copulative form, as given in the Port-Royal Logic⁴³) because it allows predicate functions to have no instances. Hence it disallows the A to I and E to O inferences, while Aristotelian logic admits them. Yet we can easily accuse classical logic of having an implicit existential import assumption too. Existential import sneaks in either in demanding that all atomic constants occur as (non-empty) items in the domain, or in having an unrestricted Existential Generalization rule. Another problem comes from with predicate functions having an empty extension. For instance, take: $\forall x (Ux \rightarrow \neg Mx)$ and suppose that it is false and that ‘Ux’ and ‘Mx’ both have null extensions in the domain. (For an interpretation, let ‘Ux’ be ‘x is a unicorn’ and ‘Gx’ ‘x is magical’: ‘no unicorn is magical’ looks false to most people.). But then: $\neg \forall x (Ux \rightarrow \neg Mx)$. Hence: $\exists x (Ux \wedge Mx)$ —the contradictory of the E proposition is the I proposition. This objection can be handled by denying it to be possible that ‘ $\forall x (Ux \rightarrow \neg Mx)$ ’ can ever be false, as ‘Ux’ will be false for every instantiation. But it does seem strange to hold that every negative universal proposition with a predicate having no instances must be true. As with Parmenides it becomes impossible to speak of a thing that “is not”.

Again, if a predicate function ‘ ϕx ’, has a null extension, then for any ψ , $\forall x (\phi x \rightarrow \neg \psi x)$ will be true. For each constant in the domain is not ϕ . But then it would follow that every goat-stag is a lollipop, etc. Even scientists want to talk meaningfully about things that they take not to exist: phlogiston; N-rays, the axolotl species. Such a logic will not apply well to human discourse.

Perhaps a free logic, which emends classical logic to address such problems, fares better. Unlike classical logic, a free logic allows atomic constants without their referring to objects in the domain, either by adding a second domain of non-existent

⁴³ Lambert (1991), p. 3.

objects⁴⁴ or by using a notion of the satisfiability of a sequence or set.⁴⁵ Free logics generally admit, in addition to the existential quantifier, a second existence operator, ‘E!’, which applies directly to individuals. In this way, ‘Homer exists’ becomes well formed, ‘E!h’, where ‘h’ is an individual constant. Some versions define ‘E!’ as ‘ $\exists x(x = a)$ ’.⁴⁶ Others take ‘E!’ as a primitive one-place predicate function.⁴⁷

Despite allowing for terms having no existential import, in general free logic seems to contain an aspect theory of predication. For, with a theory taking ‘E!’ as primitive, ‘Homer exists’ makes a simple assertion of existence, of Homer’s real presence. A statement of tertium adiacens, like ‘Homer is a poet’, taken realistically, does that as well as predicating ‘poet’ of Homer. If we take the additional, nominalist step of eschewing Platonism by reducing predicate functions and sets to abstractions and/or sets of individuals (taken as mental acts and not as real entities), we begin to get, once again, an aspect theory like the one that I have attributed to Aristotle. Indeed, Karel Lambert goes so far as to analyze the singular predication, ‘s is P’ as ‘s exists and s is P’.⁴⁸

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⁴⁴ Cocchiarella (1991), pp. 242-3.

⁴⁵ Van Frassen (1991), p. 83. So too Benson Mates and Alfred Tarski.

⁴⁶ Whitehead and Russell (1910), p. 29, define ‘E!a’ as ‘ $\exists x: x \varepsilon a$ ’.

⁴⁷ Burge (1974), pp. 318-20, summarizes some problems with most versions of free logic.

⁴⁸ Lambert (1998), p. 158.



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