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James Donaldson

Volume 31, Number 2, 1975

URI: <https://id.erudit.org/iderudit/1020480ar>

DOI: <https://doi.org/10.7202/1020480ar>

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Publisher(s)

Laval théologique et philosophique, Université Laval

ISSN

0023-9054 (print)

1703-8804 (digital)

[Explore this journal](#)

Cite this article

Donaldson, J. (1975). Essential Predication and the Syllogism : J.S. Mill and Aristotle. *Laval théologique et philosophique*, 31(2), 193–205.
<https://doi.org/10.7202/1020480ar>

ESSENTIAL PREDICATION AND THE SYLLOGISM: J. S. MILL AND ARISTOTLE

James DONALDSON

IN his *System of Logic* J. S. Mill goes to some pains to point out that the *dici de omni vel nullo*, known as the principle of the syllogism, rests on or is valid only in the case of essential predication.¹ How Mill is right in this assertion and how he is wrong in his next assertion is the subject of this paper. His next assertion is that because the concept of essence had passed out of favor in modern philosophy Aristotle's syllogism was to be reinterpreted in the light of the concept of class. This paper will show that the concept of class is not a part of an authentic interpretation of Aristotle's syllogism.

As to how it is correct to say that the syllogism as it appears in Aristotle's concept of logic is based on essential predication, the nature of logic as understood by Aristotle must be understood. Aristotle assigns the subject of his work at the outset of the *Prior Analytics* as demonstration.² Demonstration is what philosophy attempts to do when proposing its assertions. Hence, before entering into philosophy one must first know what demonstration. Thus Alexander of Aphrodisias reasoned that the treatise on demonstration should be called the *Organon* because "*organon*" meant instrument and demonstration was the instrument of philosophy.³ Also one should learn to use the instrument of a task before attempting the task. Hence, one should learn what demonstration is before approaching philosophy.

Demonstration is by reason of a syllogism. The reason for this is apparent to a student of the syllogism who possesses an idea of demonstration. In demonstrating one shows that not only something might be but must be. Since this demonstration

1. John Stuart MILL, *A System of Logic*, 8th edition, (London: Spottiswoode, Ballantyne and Co. Ltd., 1970) p. 114.

2. ARISTOTLE, *Prior Analytics*, ed. Immanuel Bekker *Aristotelis Opera* (Berlin: Walter de Gruyter, 1950) p. 24, column *a*, lines 10-11 [all subsequent quotations of Aristotle will be from this edition unless expressly stated with page and line abbreviated thus, 24 *a* 10-11].

3. Cf., Soheil M. AFNAN, *Avicenna, His Life and Works*, (London: George Allen and Unwin Ltd., 1958) p. 83.

cannot be by actual pointing out it must be through an inferential process which is air tight. Because it cannot be a matter of pointing out something which is physically it must be through discourse which carries us from one thing which is accepted or evident to something else. The syllogism must be a discourse, speech or sentence, a λόγος in which from certain things which are posited something else follows inescapably.⁴ Not all such discourses will be demonstrations because, as Aristotle shows further on, false conclusions can follow inevitably from false premises. What he will show which is cardinal to the constitution of demonstration is that true premises cannot lead inevitably to a false conclusion. A discourse which leads inevitably to a conclusion is a syllogism. One which does not is not a syllogism. Aristotle is innocent of the terminology which refers to some "syllogisms" as valid and others as invalid and the tradition which insists on this spurious terminology obscures the real truth of the statement that a syllogism with true premises cannot give a false conclusion.⁵ A demonstration must start from true premises.⁶

A demonstration must also start from premises which are proper and convertible with the conclusion so that they give the reason why the predicate belongs to the subject in the conclusion.⁷ Not all true premises tell why. Nor yet are the premises of every syllogistic inference truly evident and themselves unneeded of demonstration. Thus another type of inference arises which has a conclusion following from premises with equal inescapability but is not a demonstrative inference. Aristotle calls this inference the dialectical syllogism and sums up the lack of demonstrative conditions of the premises by saying they are the opinions of other people.⁸ Since these two types of inference are syllogisms the study of the syllogism must be carried on prior to a description of the peculiar characteristics of the demonstrative or the dialectical syllogism.

The fundamental property to be demonstrated of the syllogism is that it does always give a true conclusion from true premises. This demonstration must be carried out in such a way as to rely on principles which can be known without surreptitiously assuming that a syllogism is an argument in which a false conclusion cannot follow on true premises. Aristotle accomplishes this by outlining the parts which constitute the elements of the syllogism. Since the syllogism is a discourse or sentence, it has propositions. Aristotle will prove that a syllogism must have at least two propositions as premises to draw a conclusion. The proposition is affirming one thing of another or denying it, with the addition of is or is not when these are added as a third adjunct.⁹ Besides the propositions there are the terms which Aristotle describes simply as the ultimate elements into which the proposition is resolved.¹⁰ It is with these two kinds of constituents of the syllogism that the difficulty arises which led to a subtle misinterpretation of Aristotle's logic.

4. *Prior Analytics*, 24 b 18–20.

5. *Ibid.*, 53 b 7–8.

6. *Posterior Analytics*, ch. 1, 71 b 19–22.

7. *Ibid.*; also, chs. 4 through 7.

8. *Prior Analytics*, 24 a 30 – b 12.

9. *Ibid.*, 24 b 17; cf., *De Interpretatione*, ch. 10, 19 b 19 for "is" as third adjunct.

10. *Prior Analytics*, 24 b 16.

The proposition has been conceived in later times as the judgment, the object of the second operation of the mind. The term was conceived as the concept and taken as the object of the first operation of the mind. The first and second operations of the mind have an authentic Aristotelian pedigree but it is from the *De Anima* where the first operation is the *intelligentia indivisibilium*. Undoubtedly this means the understanding of what something is, an understanding which is accomplished by definition. What is not authentically Aristotelian is the identification of the first operation of the mind with the study of the term as concept. Avicenna was probably the first to make this connection and it is found in Albert the Great who makes the first operation of the mind the process of definition and adds to Aristotle's *Categories* Porphyry's *Isagoge* as a preamble and Boethius' *De Divisione* as a sequel. Albert's conception is, however, better than that of the Renaissance and modern logicians in that he preserves something of the rationale and order of treatises as found among the Greek commentators.

The Greek commentators and principally Ammonius Hermiae took the proposition in two ways, one as proposition and two as declaration.¹¹ The proposition was the function of the declaration in the syllogism as proposed or set out before hand. The name indicated the precise relation of premise to conclusion. The declaration was the proposition outside of the syllogism where it did not lead to any inference but simply declared the opinion of the one making the declaration. The declaration had properties which could be determined without its being placed in a syllogism. One of these properties, for example, was to determine when one declaration is the contradictory of another. The study which elaborates the properties of the declaration is Aristotle's *De Interpretatione*. On this point Albert is in full accord with Ammonius.

In this way interpretation and declaration differ in their notion from the proposition. The proposition is a declaration subsumed in the syllogistic form where it has many properties which are absent to the interpretation or declaration, such as are the relation of the three terms in the subject and predicate of the propositions, a relation without which the subject and predicate of a declaration are not parts of a syllogism. Such things are determined in the *Prior Analytics* where the form of the syllogism and its power are treated. The relation of terms in the syllogism does not belong to the interpretation or declaration but rather if the subject studied is an interpretation it pertains to its study to be interpreted affirming or negating either universally or particularly, as a finite or infinite declaration and as one or several declarations and as contradictories or contraries and such like, without which a complete interpretation of a thing in speech cannot be made. Therefore since these latter properties of the declaration exist in isolation from the construction and figure of a syllogism, their study should not be reduced to the syllogism as if they were parts

11. AMMONIUS HERMIAE, *In Aristotelis De Interpretatione Commentarius*, in *Commentaria in Aristotelem Graeca*, vol. IV, pars V, ed. Adolphus Busse (Berlin: Georg Reimer, 1897) [abbreviated subsequently as: Ammonius, *In De Int.*], p. 4, lines 10 to 16: "Thus these simple sentences considered in this study by themselves are studied only as declarations and not as propositions. In the *Analytics* [i.e., the *Prior Analytics*] he takes them as parts of the syllogism and thus quite reasonably thinks they should also be studied as propositions, for the ancient philosophers named them propositions on account of their being proffered by those wishing to syllogise something to those participating in the discourse." We speak today of "advancing a proposition."

of the whole which is syllogism. Therefore because of this they are treated not in the *Prior Analytics* but in their own book which is called the *Peri Hermeneias*, because such properties do not follow on the syllogism but from just this which is the interpretation and they would follow on the interpretation even though it were never assumed into the syllogism.¹²

Where Albert slips is in the consideration of the term.¹³ The term is the simple expression of which propositions are composed, the subject or the predicate. In the declaration it is known more properly as the noun or verb because a complete declaration can be made with a noun and a verb, one such as "John runs." Here there are grammatical indicators in most languages showing which is verb and which is noun. In those languages where there are no grammatical indicators the function is taken over by word order. In whatever way the distinction between "noun" and "verb" is carried out it involves what the Greek commentators called a "secondary signification" added on to a "primary signification."¹⁴ The secondary signification was expressed quite definitely by word endings which had no "real" meaning. These word endings had a function only in the declaration. When a word was taken outside of the declaration it had to be thought of as losing its character as noun or verb. In some languages, such as Chinese, this would have been simple. Even some English words such as "running" function as nouns or parts of verbs without any change. The consideration of a simple expression apart from its secondary signification and in terms of its primary signification was the object of the treatise called the *Categories*.

It is not at all obvious that a study of simple expressions or words should fit into the study of logic. If logic is the study of inference and demonstration, of syllogism, that is, it does not study signification except insofar as signification manifests the inferential process or affects it. Thus the fallacies based on language study how the syllogism can be made faulty because of mistakes in the use of words. The study of the declaration can hardly abstract from the ambiguities of negation and word order which were particularly difficult in Greek and those languages which make "is" do double duty as verbal copula and as a verb expressing existence have trouble with expressions like "Homer is a poet" after Homer is dead. What, though, does the primary signification of words have to do with the syllogism?

The answer is that the syllogism has nothing to do with the primary signification of words in the full extension of this subject. Signification and syllogism are still diverse subject matters. The primary signification of words enters into logic only inasmuch as it is related to the syllogism. This can be understood when two seemingly disparate things are comprehended. The first is essential predication and the second is the "position of terms" in the syllogism.

If the relation between "white is a color" and "man is an animal" is contrasted with "this man is white" it will be found that the first two cases permit the predication

12. ALBERTUS MAGNUS, *Commentaria in Peri Hermeneias*, I, tractatus I, caput lum. (Paris: Vives, 1890), p. 2.

13. Cf., my paper "Aristotle's *Categories* and the *Organon*" in *Proceedings of the American Catholic Philosophical Association*, Spring, 1973, pp. 149-156.

14. Cf. *inter alia*, PORPHYRY, *Isagoge et In Aristotelis Categorias Commentarium*, in *Commentaria in Aristotelem Graeca*, vol. IV, pars I, ed. Adolphus Busse (Berlin: Georg Reimer, 1887) p. 57.

of still a third term — a color is a quality and an animal is a substance — which can be predicated not only of the predicates of the first sentences but of the subjects. Where there is essential predication what is predicated essentially of the predicate can be said of whatever the predicate is predicated essentially of. The rule is quite obvious as far as it goes. It is also quite obvious that there is another type of predication which does not have this property. When we say a man is white or pale and paleness is a complexion we cannot say a man is a complexion. This latter type of predication is accidental predication.

Before going on it will be well to give Aristotle's presentation of the above rule: *ὅταν ἕτερον καθ' ἑτέρου κατηγορηται ὡς καθ' ὑποκειμένου, ὅσα κατὰ τοῦ κατηγορουμένου λέγεται, πάντα καὶ κατὰ τοῦ υποκειμένου ῥηθήσεται* (*Categories*, chapter 3, 1 b 9). The key expression here is *ὡς καθ' ὑποκειμένου*. Over this expression much has been written. That it means "essential predication" is gleaned from Porphyry and from a commentary on a passage in the *De Interpretatione* by Ammonius. Much damage has been done to the insight gained from these passages by contemporary commentators. Moravcsik¹⁵ has "refuted" Aristotle by the following example: "man" is predicated of "this man" and "species" of "man", but "species" is not predicable of "this man." A reading of Porphyry would have shown him that the predication of "species" of "man" is accidental and not essential predication.¹⁶ A second error is to take the expression *ὡς καθ' ὑποκειμένου* — as of a subject — to mean predication generally, whether essential or accidental. This is erroneous as can be seen from Ammonius' commentary on the passage in the *De Interpretatione*.¹⁷ Unfortuna-

15. J. M. E. MORAVCSIK, "Aristotle on Predication" in *Philosophical Review*, 76 (1967) p. 92.

16. PORPHYRY, *op. cit.*, p. 80.

17. AMMONIUS, *In De Int.*, p. 49: "After this he passes over the phrase 'of which no part means separately' as having received sufficient explanation in the disquisition on the noun and he comes down to what is left and says that it was said that verbs are significative of those things said of another, that is, of those things which are said of a subject or in a subject. And this is said because some verbs as well as some nouns inhere in the subjects of which they are predicated according to the essence of their subjects and are completive of those things of which they are said to be predicated, as in the *Categories* [1 a 2] the expression 'of a subject' was used; others inhere as accidents in their subjects, which mode of inference we call being in a subject. Just as when we predicate 'animal' and 'white' of man, both of which are nouns, we do not predicate them both in the same way, but we say 'animal' of man as of the subject; 'white', though, is said as having its existence in that subject. The same mode will hold with regard to verbs, for when I say 'to walk is to move according to place' or 'to heat is to act', I predicate 'to move according to place' of 'walking' and 'to act' of 'to heat' as of a subject, since these predicates are more generic than their subjects, but when I say 'Socrates is walking' or Plato 'reads', the predicates are predicated of the subjects according to concomitance [or by accident]. In order to represent both these species of predication when he says that verbs are naturally always predicates, he makes an enumeration of the ways in which they are predicates, namely sometimes as being of a subject while at other times as being in a subject. This interpretation will fit the text as it is, since we set it down as we found it in the majority of the manuscripts. If, however, some wish to have the text read: 'and always it is the sign of those things which inhere, as those things of a subject,' as Porphyry says, we shall say that 'of a subject' is taken for 'in a subject' as well. It is sometimes customary to call 'in a subject' by the designation 'of a subject'. The first presentation of the text and its interpretation are preferable, though, to this latter one." A similar interpretation, though more explicit, is found in Alexander of Aphrodisias, *In Aristotelis Topicorum Libros Octo Commentaria*, in *Commentaria in Aristotelem Graeca*, vol. II, pars II, ed. Maximilianus Wallies (Berlin: Georg Reimer, 1891) p. 297: "When one thing is predicated of another as of a subject, whatever is said of the predicate will be said of the subject. What is said of something as of a subject is predicated of that thing essentially."

tely for the non-specialist L. Minio-Paluello has seen fit to delete the passage in the Aristotelian text upon which Ammonius' enlightening remarks are based. This he does on the authority of Porphyry "*teste Ammonio*."¹⁸ What this means is not that Porphyry said explicitly in his own commentary that the passage is spurious; Porphyry's own commentary on the *De Interpretatione* is not extant. What he did say must be reconstructed from Boethius' commentaries on the *De Interpretatione*, because these are the only link we have to Porphyry which is not possibly contaminated by the Ammonian commentary. In Boethius' version of the Aristotelian text the passage in question exists. Furthermore, Ammonius says that the passage is found in the majority of the manuscripts and that even Porphyry's version of the text is to be interpreted in the way he proposes.

The passage in question is the following. *καὶ ἀεὶ τῶν καθ' ἑτέρου λεγομένων σημεῖον ἐστίν, ὅσον τῶν καθ' ὑποκειμένου ἢ ἐν υποκειμένῳ*.¹⁹ It refers to the verb. The verb is always the sign of those things which are said of another, as of a subject or in a subject. The expressions are exactly parallel to those of the *Categories*. The generic or quasi-generic expression is *καθ' ἑτέρου λεγόμενον*. What is said of another is *καθ' ὑποκειμένου* or *ἐν ὑποκειμένῳ*. The "or" joining these two phrases can be taken as "*seu*" or as "*aut*." Porphyry takes it as "*seu*" and fails in his commentary on the passage to note a significant difference. The failure is not of great moment because the distinction between essential and accidental predication is unimportant in the study of the declaration. Ammonius notes explicitly that the expression "as of a subject" means essential predication, "in a subject" means accidental predication.

Given the re-establishment of the text there is still the objection that the distinction between essential and accidental predication breaks down when we move into the area of the "propers" and "difference." It does indeed and this was recognized by the Greeks.²⁰ It does not, however, destroy the obviousness of the distinctions drawn above. The objection also supposes the distinctions drawn above are somehow insights into the reality of things. This is not true. Essential predication does not imply the existence of essences or that humans know essences. It merely means that the human intends to predicate the essence and it is well known that the road to hell is paved with good intentions. The intention has certain requirements that can be defined apart from knowing whether or not essences exist and can be known. Lack of understanding of this point is the major impediment to the acceptance of Aristotelian logic in anything but a horribly deformed and easily refutable form. It will be shown that Mill did not understand this point and that Aristotle did. Furthermore, two key texts from Porphyry will be adduced to show that he grasped this distinction in the context of his own time.

First, though, the requirements of essential predication must be outlined. To predicate essentially is to predicate so as to tell the essence or whatness. This is told by the definition. The terms assigned in the definition must be more known. The greater

18. Cf., *Aristotelis Categoriae et Liber de Interpretatione*, ed. L. Minio-Paluello (Oxford: Clarendon, 1966) p. 50, critical note to lines 10 and 11 of Aristotle's text.

19. *De Interpretatione*, 16 b 10-11.

20. Cf., PORPHYRY, *The Isagoge*.

knowability of the defining terms is gained by their having a greater universality.²¹ Thus "reptile" tells what a dinosaur is. Being of greater universality "reptile" is sayable of "dinosaur" but "dinosaur" cannot be said essentially of "reptile." Within the confines of essential predication there is a definite order which arises in the intentions of the predicator. It appears to him to be absurd to reverse this order if he understands that the absurdity of the reversal applies only within the confines of essential predication and only to the intentions of the predicator. If he begins to wonder how this applies in virtue of predication generally and how he knows that things are arranged in the hierarchies expressed in his concepts he will indeed be at a loss.

The order of irreversibility which arises in essential predication founds the order or "position" of terms in the syllogism. "Position" or "*thesis*" as used in the *Prior Analytics* seems to be derived from the geometrical use of the term.²² The more universal term is designated by a letter of the alphabet which is first or comes before the other letters. The rule resulting from the universality of the terms is that the more universal term is the predicate of the lesser. Of three terms one is most universal, one least and one midway in universality. In the first figure or arrangement of terms the middle term coincides with the term mid-way in universality. In the other two figures it lies "outside the extremes," as Aristotle says,²³ being either the most universal term or the least.

It is to be noticed that the order of the terms is established prior to the formation of the three figures and the figures are constituted prior to the qualification and quantification of the premises. It is, therefore, accidental to the constitution of the figures that the second figure can draw only negative conclusions and that in a negative statement the relative universality of the subject and predicate is of no moment. The relative universality of the terms is established on the basis of their order in the line of essential predication and derives from the primary signification of the terms before they are parts of the syllogism or the declaration. As such the syllogism is based on essential predication.

The objection to the present interpretation implicit in Lukasiewicz's remarks on the order of terms in second figure syllogisms is, therefore, mistaken.²⁴ The fact that the relative universality is unimportant in the negative conclusion of the second figure syllogism does not, as he claims, show that the figures of the syllogism are not based on the relative universality of their terms. Rather it is to be supposed that Lukasiewicz understands by relative universality the convertibility of a proposition. But the

21. These rules are inspired by a passage in STEPHANUS, *In Librum Aristotelis De Interpretatione Commentarium*, in *Commentaria in Aristotelem Graeca*, vol. XVIII, pars III, ed. Michael Hayduck (Berlin: Georg Reimer, 1885) p. 16. Cf. also a similar passage in THOMAS AQUINAS, *In Duodecim Libros Metaphysicorum Aristotelis Expositio*, ed. Cathala-Spiazzi (Rome: Marietti, 1964) VII, lectio 15, nn. 1614-18, p. 387.

22. Cf., LIDDELL & SCOTT, *Greek-English Lexikon* (Oxford: Clarendon Press, 1966) p. 795, entry IV, 2, local position; also BONITZ, H., *Index Aristotelicus* (Akademische Druck- und Verlagsanstalt: Graz, 1955 [reprint of Prussian Academy edition: Berlin, 1870]) page 327, column b, line 8.

23. *Prior Analytics*, 26 b 9 and 28 a 14.

24. Jan LUKASIEWICZ, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic* (Oxford: Clarendon Press, 1967) pp. 30-32.

convertibility of propositions is a property of propositions in abstraction from the essentiality or accidentality of the predication and depends on the quantity as well as the quality of the terms. It describes a property of propositions immediately necessary for the elaboration of the syllogism. If the universality of the terms were founded on the convertibility of propositions, Lukasiewicz's objection would hold. But it does not, because the universality of the terms is based on their primary signification, a property they have outside the syllogism and outside the declaration.

Appreciation of the fact that the syllogism rests on essential predication shows why Aristotle's *Categories* treats only of essential predication. Its object is to show that there is essential predication in regard to accidents as well as substances.²⁵ Thus Aristotle shows that this grammar — ἡ τις γραμματικὴ — is an individual accident, because it is in the soul. Nevertheless, it has "grammar" and "science" predicated of it essentially. To think that Aristotle is concerned with predication generally here is to fall into obvious contradictions and difficulties, the most obvious of which is that Aristotle overlooked accidental predication.²⁶

The thought that Aristotle overlooked accidental predication comes from the modern misinterpretation of the syllogism which sees it as based on predication generally and as essentially identical with the enthymeme. A few reflections will show the incorrectness of this common view. First, the syllogism is based on the *dici de omni vel nullo*. This means that when reduced to the first figure the major premise must be quantified universally. Otherwise the conclusion is not inescapable. But what is universal is necessary and essential or at least intended to be so. Accidental predication cannot give us anything more than a generalization. The enthymeme is based, in its strongest case, on something which is known to be merely a generalization. For example, it is known that not all women with milk in their breasts have recently given birth. Yet it is also known that most cases of women with milk in their breasts are also cases in which they have also recently given birth and thus general propositions can found an inferential process which gives not an inescapable conclusion but one which is likely to hold true. Accidental predication is operative in inferential processes but these inferences are enthymematic and of a nature radically distinct from that of the inescapable inferences of the syllogism. This is the first reflection.

The second is that accidental predication comprizes no true universality and consequently no order of terms. It is the same to say that the builder is a pale man and the pale man is a builder.²⁷ One line in Porphyry seems to suggest that all predication was conceived as an identification of terms signifying individually.²⁸ To carry the above example further and say "the builder is Martha's husband" so that "therefore

25. Cf., BOETHIUS, *In Categoriae Aristotelis Libri Quatuor in Patrologia, Cursus Completus, series latina*, ed. Migne (Paris, 1844 [reprint Turnholt, Belgium]), vol. 64, column 175.

26. Cf. Joseph C. KUNKEL, "Non-Essential Predication in the 'Categories'," in *The New Scholasticism*, Winter 1971, vol. XLV, no. 1, pp. 110-116.

27. Cf., ALEXANDER OF APHRODISIAS, *In Aristotelis Metaphysica Commentaria*, in *Commentaria in Aristotelem Graeca*, vol. 1, ed. Michael Hayduck (Berlin: Georg Reimer, 1891), page 370, lines 31 and 32.

28. PORPHYRY, *op. cit.*, page 58, line 9.

the pale man is Martha's husband" is not a syllogism because it operates not on the *dici de omni* but on the *dici de eodem*, if such an expression is permissible. The accident may be considered a universal inasmuch as it is contained in many subjects, says Boethius,²⁹ but it does not contain properly as the genus or species. Perhaps a clearer way of stating the radical difference between a genus, such as "reptile" said of dinosaur, and an accident is that when we come to saying what something is we must use a term applicable to several subjects in the same sense. Thus, the *Categories* suppose the radical distinction between essential and accidental predication in starting off with a description of *ὁμώνυμα* — things called by the same name but having a different definition applied to each thing.³⁰ The fact that the subjects of this predication are necessarily several and that an immediate relation to *συνώνυμα* — things called by the same name and having the same definition applied in each case — shows that the essential preambulatory remarks to the *Categories* should include a relation of this treatise to the treatise on the syllogism and the distinction between essential and accidental predication. There is no question of reference to a common definition in the predication of an accident of several subjects.³¹

Mill's interpretation of the *dici de omni* is correct inasmuch as it assumes that the principle is based on essential predication. But then Mill seeks to discount the syllogism by saying that essential predication implies the "objective existence" of "secondary substances."

This maxim (the *dici de omni vel nullo*), however, when considered as a principle of reasoning, appears suited to a system of metaphysics once indeed generally received, but which for the last two centuries has been considered as finally abandoned, though there have not been wanting in our own day attempts at its revival. So long as what are termed Universals were regarded as a peculiar kind of substances, having an objective existence distinct from the individual objects classed under them, the *dictum de omni* conveyed an important meaning... That a universal was predicable of the various individuals contained under it, was then no identical proposition but a statement of what was conceived as a fundamental law of the universe.³²

What Mill means by "objective existence" is given in another passage.

The question between Mr. Spencer and me is merely one of language; for neither of us... believes an attribute to be a real thing, possessed of objective existence, we believe it to be a particular mode of naming our sensations, or our expectations of sensation, when looked at in their relation to an external object which excites them.³³

In essence Mill is saying that Aristotle's syllogism requires for its functioning the supposition on the part of the user that essences, which are termed secondary

29. BOETHIUS, *Commentaria in Porphyrii Isagogen a Se Translatum in Patrologia, Cursus Completus cit. supra*, vol. 64, column 153.

30. *Categories*, 1 a 1-12.

31. PORPHYRY, *op. cit.*, page 16, line 6, says that the proper is predicated univocally, but the accident denominatively (*op. cit.*, page 92, lines 22 to 24).

32. MILL, *op. cit.*, p. 114.

33. *Ibid.*, p. 117.

substances in chapter five of the *Categories*,³⁴ exist in the manner the Platonic Ideas were conceived to exist by Aristotle.

That Aristotle himself directly contradicts Mill is seen if it is taken into account that demonstration, as indicated above, is a syllogism. Aristotle, then, says quite explicitly in the *Posterior Analytics* (77 a 3) that

Εἶδη μὲν οὖν εἶναι ἢ ἓν τι παρὰ τὰ πολλὰ οὐκ ἀνάγκη, εἰ ἀπόδειξις ἔσται, εἶναι μὲντοι ἐν κατὰ πολλῶν ἀληθὲς εἰπεῖν ἀνάγκη· οὐ γὰρ ἔσται τὸ καθόλου, ἂν μὴ τοῦτο ἦ· ἂν δὲ τὸ καθόλου μὴ ἦ, τὸ μέσον οὐκ ἔσται, ὥστ' οὐδ' ἀπόδειξις. δεῖ ἄρα τι ἐν καὶ τὸ αὐτὸ ἐπὶ πλείονων εἶναι μὴ ὁμώνυμον.

There need not be species or a one something besides the many if demonstration is to be. There should, though, be one said truly of many, for there is no universal without this and if there is no universal there is no middle term and hence no demonstration. There must, therefore, be some one and the same thing which is said of many in a non-equivocal fashion.³⁵

In another place Aristotle calls the Platonic Ideas the twittering of birds.³⁶ It is true that the ancient Aristotelians did not explicitly mention the possibility that essences might not exist at all. Nevertheless, the statement of Aristotle can be extended to include that possibility. Demonstration, then, would imply essential predication but not essences. These considerations bring a new and much needed precision to the understanding of logic as Aristotle formulated it. Bertrand Russell's statement that formerly logic supposed that things were a certain way,³⁷ if taken to refer to authentic Aristotelian logic, cannot be true.

The same sense must be given to the opening remarks of Porphyry in the *Isagoge* when he abstains from whether the genera and species exist separately from bodies or not or whether they are not just concepts. In his commentary on the *Categories* he is more explicit, citing the oldest tradition available among the commentators, those prior to Alexander of Aphrodisias, principally Boethus and Herminus. The text of Herminus that Porphyry reproduces says that the *Categories* do not treat of the genera of being, the subject on which Porphyry collaborated with Plotinus to write the fifth book of the *Enneads*. Rather they treat of accusations.³⁸ Porphyry explains that accusation means telling what something is and thus represents the function of the primary signification of words.³⁹ Each word, when abstracted from its grammatical function and used isolatedly, tells what something is. At least these whatnesses are concepts and the Greeks of the epoch realized quite clearly that the question of the reality of whatnesses or essences transcends the limits of logic.

Mill's understanding of the non-existence of essences misses all the complexities inherent in Porphyry's question, prime among them being the recognition that logic is not founded on an answer one way or the other to the question of the existence of

34. *Categories*, 2 a 14-19.

35. *Posterior Analytics*, ch. 11, 77 a 5-9.

36. *Ibid.*, ch. 22, 83 a 32-35.

37. BERTRAND RUSSELL, *Our Knowledge of the External World* (Open Court: Chicago, 1929), p. 62 [quoted in W. T. JONES, *A History of Western Philosophy*, 2nd ed. (Harcourt, Brace & World: New York, 1969) vol. IV, p. 339.

38. PORPHYRY, *op. cit.*, page 59, line 20 to 33.

39. *Ibid.*, p. 56.

essences. For Mill the existence of essences means that the *substantia secunda*, which phrase as coined by Aristotle in chapter five of his *Categories* refers to the genera and species of an individual substance, exist really beyond being concepts and since "really" in Mill only means as a thing, Mill must be taken as meaning that the genera and species themselves are real after the manner of the Platonic Ideas. That they could be in sensible bodies, as Porphyry's division in the *Isagoge* suggests,⁴⁰ does not seem to be considered by Mill. Even if it had occurred to him, his complete denial of the existence of essences would have led to the same conclusion: denying the existence of essences as Platonic forms Mill denies the existence of essence altogether. The word "man" becomes for him the short hand description for the properties that belong to all men.

The assertion that the entire nature and properties of the *substantia secunda* formed part of the nature and properties of each of the individual substances called by the same name — that the properties of Man were the properties of all men — was a proposition of real significance when man did not *mean* all men, but something inherent in men and vastly superior to them in dignity. Now, however, when it is known that a class, an universal, a genus or a species, is not an entity *per se*, but neither more nor less than the individual substances themselves which are placed in the class, and that there is nothing real in the matter except those objects, a common name given to them, and common attributes indicated by the name...⁴¹

The denial that a universal, which is but the concept of an essence, is an "entity *per se*" leads Mill to the concept of class. The route he follows, though, is erroneous, because he passes from the non-existence of essences (an assertion forbidden to him as logician) to the denial of essential predication. This illation is founded only on the erroneous assumption that essential predication implies the existence of essences in reality. The completion of his erroneous march comes with the total suppression of essential predication, which alone is truly universal predication, and its substitution with accidental predication. Mill's logic is founded on the universal supposition that all predication is accidental. It becomes theoretically impossible to distinguish between "all men are animals" and "all crows are black." In each case it is merely a matter of happenstance that all men or all crows are such and such.

The resulting concept of class does not, however, simply replace the principle of the syllogism, it takes on a character entirely different, becoming not the principle peculiar to the explanation of inevitable and inescapable inferences, but a general principle on a par with the principle of contradiction as is seen in the following test of Mill's *System of Logic*.

What, I should be glad to know, do we learn by being told, that whatever can be affirmed of a class may be affirmed of every object contained in the class? The class *is* nothing but the objects contained in it: and the *dictum de omni* merely amounts to the identical proposition, that whatever is true of certain objects is true of each of those objects. If all ratiocination were no more than the application of this maxim to particular cases, the syllogism would indeed be, what it has so often been declared to be, solemn trifling. The *dictum de omni* is on

40. *Ibid.*, p. 1.

41. MILL, *op. cit.*, pp. 114-5.

a par with another truth, which in its time was also reckoned of great importance, "whatever is, is." To give any meaning to the *dictum de omni*, we must consider it not as an axiom, but as a definition; we must look upon it as intended to explain, in a circuitous and paraphrastic manner, the meaning of the word *class*.⁴²

The reduction of the *dici de omni* to the concept of class destroys the possibility of a study and determination of the rules of inference and demonstration as a particular science zeroed in on these peculiar and partial objects and lifts it to the level of a speculation on being in general. He who studies inference does not know the truth of the principle of contradiction. Euthydemus and his brother Dionysodorus calmly deny the latter while assenting to the inferential character of the arguments which Socrates mounted to lead them to what he thought would be an admission of the foolishness of their position.⁴³ Aristotle's inferences which show that a man would be reduced to the level of a speechless plant if he denies the principle of contradiction are inferences and what an inference is must be capable of being agreed upon prior to any metaphysical disputation or supposition whatever. It must be a study which can be mastered without knowing aught else, as music can be learned without becoming adept at geometry.

The second error in Mill's concept of the syllogism is that he reduces all inference to one kind and subsumes it under the concept of class.

If we generalize this process, and look out for the principle or law involved in every such inference, and presupposed in every syllogism, the propositions of which are any thing more than merely verbal; we find, not the unmeaning *dictum de omni et nullo*, but a fundamental principle, or rather two principles, strikingly resembling the axioms of mathematics. The first, which is the principle of affirmative syllogism, is, that things which co-exist with the same thing co-exist with one another: or (still more precisely) a thing which co-exists with another thing, which other co-exists with a third thing, also co-exists with that third thing. The second is the principle of negative syllogisms, and is to this effect: that a thing which co-exists with another thing, with which another third thing does not co-exist, is not co-existent with that third thing.⁴⁴

But there is not a single type of inference. Syllogistic inference is one kind of inference and its conclusion follows inevitably. The reason its conclusion follows inevitably is because the major premise is a universal affirmative or negative proposition. The enthymeme is a probabilistic inference and even when it is based on a universal proposition, such as the feverish are sick, this proposition is only contingently universal and is expressed as an indefinite or unquantified statement. Only where one intends an essential predication can there be a necessary illation.

Mill's re-interpretation of the syllogism as under the class concept and its extension to cover all "deductive" reasoning, making no distinction between syllogism and enthymeme, as Aristotle did, leads to the development of a logic which becomes progressively conscious of the contradictions inherent in a position which insists that all predication is accidental. First all predication involving "is" as a verbal copula is reduced to what Aristotle called predication *κατα συμβεβηκος* in the fifth book of the

42. *Ibid.*

43. Cf., PLATO, *The Euthydemus*, ed. John Burnet (Oxford: Clarendon Press, 1968) 286-287.

44. MILL, *op. cit.*, p. 117.

Metaphysics; "is" means what is concomitant with, accompanies or co-exists with.⁴⁵ There is now no sense of the word "is" which corresponds to Aristotle's sense of the word there as *καθ' αὐτὰ* where "is" means the same.⁴⁶ Consequently all predication beyond the identification of an individual with himself becomes, quite naturally, class inclusion. In the modern view it is simply absurd to say that "is" means identity in sentences like "Socrates is a man" or "Socrates is sitting" and one half of Aristotle's chapter seven of the fifth book of the *Metaphysics*, as well as his whole conception of logic, is simply lost on the modern viewpoint that reads Aristotle from the viewpoint of class logic.

It is in this light that the following text from Russell must be meditated upon.

It is remarkable that before Frege, every definition of number that had been suggested contained elementary blunders. It was customary to identify "number" with "plurality." But an instance of "number" is a particular number, say 3, and an instance of 3 is a particular triad. The triad is a plurality, but a class of all triads — which Frege identified with the number 3 — is a plurality of pluralities, and number in general, of which 3 is an instance, is a plurality of pluralities of pluralities. The elementary grammatical mistake of confounding this with the simple plurality of a given triad made the whole philosophy of number before Frege, a tissue of non-sense in the strictest sense of the term "non-sense."⁴⁷

It is undoubtedly non-sense to say that a particular three is a plurality of pluralities of pluralities and is in fact all number because it is in the "classes" of three, number and plurality. But that such is implied in the whole philosophy of number before Frege is subject to some doubt. For Aristotle the predication involved would be essential, not the accidental predication of class inclusion and the sense of saying number is a plurality, namely a plurality measured by unity, to give the full definition, is to tell what a number is. Number is a plurality as a dinosaur is a reptile, a reptile, that is, and not all the reptiles living and dead. Thus number is plurality, not a number of pluralities and a number is a number, that is, one number and not all numbers. As such it is a plurality, one single plurality out of the many different kinds and individual pluralities that there are. Instead of a grammatical mistake going back two millenia Russell is dealing with a fallacy introduced by his own god-father and erroneously taken as inherent in the workings of the human mind.

Other problems arise such as what to do with the class with only one member, the class with no members and the class which is a member of itself. There is also the genesis of the propositional calculus out of the class logic. Whatever the complexities and problems involved in this genesis, what seems certain at this point is that they do not emanate in a straight line from authentic Aristotelian logic. In comparing the Aristotelian logic with other logic it is certainly wrong to describe Aristotle's as a class logic. This is a much later misinterpretation of Aristotle's work which implies in reality many metaphysical presuppositions and ignores the *finesse* of Hellenistic Aristotelianism in avoiding such.

45. *Metaphysics*, V, chapter 7, 1017 a 12-13.

46. *Ibid.*, 1017 a 27.

47. Bertrand RUSSELL, *A History of Western Philosophy* (New York: Simon and Shuster and London: George Allen and Unwin, 1945) chapter xxxi "The Philosophy of Logical Analysis" quoted from Morton WHITE, *The Age of Analysis* (New York: The American Library, 1955) p. 196.