

PART IV

Studies

Aristotle's *Categories* and the Organon

by James Donaldson

The question of the position and function of the *Categories* in Aristotle's logic is one which finds Albert the Great, whose dependence on the Arabic logicians is incontestable, at variance with the Greek commentators whom he did not know.¹

Albert borrowed from Avicenna the general definition of logic as a science and art of going from the known to the unknown by reasoning.² The unknown was either complex or incomplex. The complex unknown was known by argument and the incomplex unknown by definition. Basing himself on this notion Albert classified the *Categories* as part of a "science of definition" which also contains Porphyry's *Isagoge* and Boethius' *De Divisione*, tractates needed, in Albert's mind, to complete the science of definition.³ The science of definition is distinct from the science of argument and reducible to no part of it.⁴ Argument, which is more properly a *discursus rationis*, is studied in the *Prior Analytics* and in the *Posterior Analytics*, *Topics* and *Sophistical Refutations*. The *Peri Hermeneias* studies the statement or declaration (*apophansis*) in preparation for the study of the syllogism even though there is no *discursus rationis* in the declaration.⁵ To affirm or negate is not to argue. The reason why the study of the declaration still belongs to logic, despite the lack of *discursus* in regard to it, is because it belongs to the same science to study the subject and the parts of the subject of the science.⁶ Hence, just as the *Peri Hermeneias* studies the noun and the verb prior to defining the declaration, in like manner the student of argument must study the material parts of the argument. The proposition is part of the syllogism, hence it must be studied under the title of the declaration in a science of syllogism and argument.

What is curious about Albert's logic is that the syllogism also contains the term as one of its parts yet there is no apparent study of the "term" outside the syllogism. Albert explains that the proposition has a different function outside the syllogism, which is why it is studied under a different title before one enters into the study of the syllogism. In the syllogism the proposition is placed before the conclusion as that from which the conclusion follows. As a declaration it intends to infer nothing, but simply expresses something which may be true or false. But the term has no manifest function outside the syllogistic process in Albert's account of Aristotle's logic. Rather the in-complex expression, as he calls it, becomes the province of an entirely distinct part of logic, the study of definition.⁷

What in Albert's view is in conformity with the Greeks, especially Ammonius,⁸ is the interpretation of the position and function of the *Peri Hermeneias*. Also the Greeks seem to be in agreement that definition is reducible to no part of the science of syllogism.⁹ The discrepancy comes when the simple expression, which is the term in the syllogism and the noun or verb in the declaration, comes into consideration. In the Greeks themselves there is no trace of a "science of definition." Rather the *Categories* study simple expressions in view of the syllogism and not as part of a science of definition. The position espoused at present is that Albert the Great is in error as to his conception of the general definition and division of logic.

The first error is Albert's definition of logic as a science and art of going from the known to the unknown by reasoning. To define logic as such is to employ too common a characteristic for defining anything.¹⁰ The unknown may be known in a variety of ways, by measuring, by numbering, by comparing qualities and by reasoning. Reasoning itself may come through either the syllogism or the enthymeme. The difference between these is that, as Albert says, the syllogism must rest on a strictly universal premise, a premise which is the major premise when reasoning has been reduced to the first figure, whereas the major premise in the so-called first figure of the enthymeme may be only a generalization.¹¹ Albert's awareness of this distinction and his awareness that natural science deals with a world in which things happen typically for the most part only is what moves him to stretch the content of logic to include syllogism and enthymeme, because logic, he thinks, must give the mode common to all sciences.¹²

It is true that Aristotle does touch upon enthymeme briefly at the end of the *Prior Analytics*. But his intention seems to be merely to show how far enthymematic reasoning can be reduced to the syllogistic schema. Also the description of enthymeme is an appendix to the treatise on syllogism. Surely if Aristotle had wished to treat of the two main types of reasoning, syllogism and enthymeme, he would have given them "equal time," so to speak.

Another argument against Albert is that the mode of going from known to unknown in syllogism and enthymeme is so radically distinct as to be incapable of comprehension under a single genus. Syllogism is applied univocally to both the demonstrative and the dialectical syllogism and hence can be the genus which is the subject of a science. Indeed, the suggestion being proposed here is that syllogism is the subject of Aristotle's *Organon* and that enthymeme is treated there only incidentally.¹³

The reason for choosing syllogism as the subject of a science is that the subject of a science must be capable of definition so that its "passions" or properties can be demonstrated of it through this definition.¹⁴ There is no other genus that includes syllogism and definition, for example, or syllogism and induction, or syllogism and enthymeme, so that a science of logic must be a science of syllogism as one, separate science and of definition as another separate science and of enthymeme, induction, measurement and whatever else may serve to go from the known to the unknown each taken as the subject of a separate science.

Albert would probably rejoin that logic is a single science in the manner that metaphysics is a single science. But metaphysics is not a science in the strictest sense and being, its proposed subject, is not a genus. This is why Aristotle must show, in the fourth book of the *Metaphysics*, that the study of being as such is a single science in the manner that medicine is. Medicine studies other things besides the healthy animal, such as drugs, scalpels and diets, but it studies them only in function of the health of animals. Metaphysics is a single science in this loose sense, not in the sense of proving properties of a definable subject. But then Metaphysics does not produce a demonstration of the first principles of human thought, so that it is not quite a science in the strictest sense.

Logic, however, must be a science in the strict sense and a particular science, what Albert, in another consideration, calls a *scientia specialis*. Logic must be a science because its principal subject is demonstration.¹⁶ Demonstration is showing the reason why something necessarily is as it is and the rules followed in assigning this definition must themselves be necessary and hence either self-evident or demonstrated. But demonstration and syllogism are particular subjects about which one can know without knowing aught else. Knowledge of them is not reducible to the most general principles such as the principle of non-contradiction or the principle of causality and the statement that one must go from the known to the unknown is just such general principle which does not tell us what we most want to know, how to get from the known to the unknown. A science of reasoning must start from the definition of inference. This is precisely what Aristotle does in giving the definition of the syllogism as a sentence in which some things being posited something else follows necessarily just because they are

so posited.¹⁷ This definition of inference applies first to the syllogism or categorical syllogism as it came to be known in later authors. Ultimately, through the elaboration of the figures and moods in which there is truly a collection (*sylogismos*) of "extremes," the proposition is proved that states that in no syllogism which is truly a syllogism can there be true premises and a false conclusion,¹⁸ a proposition which grounds the rules in the $p \supset q$ types of inferences when these are reducible to the categorical syllogism.¹⁹

The final objection to Albert's characterization of logic as a science of going from the known to the unknown is that if the *Isagoge* of Porphyry, Aristotle's *Categories* and Boethius' *De Divisione* give us the science of definition, why are none of the rules of definition proved in any of these treatises? Why are we never told why definition must be through a genus and a difference? Why are individuals not definable? The answer is not that such a subject is exclusively reserved for Metaphysics. There are definite reasons which must be given by the logician, as Albert himself says.²⁰ These reasons can be derived from the definition of definition as a sentence telling what something is. Thus the defining term must be more known and hence of greater universality than the term being defined.²¹ Hence, the genus must be assigned and once the genus is assigned terms of wider universality than the species must be assigned to tell what kind of thing the species is and make the definition convertible with the species defined. By the same token individuals are not definable because no congeries of general terms can ever be collected which is convertible with them.²² If the three works just mentioned belong to a science of definition they fail to demonstrate these most important truths about definitions, truths which are far from self-evident as is witnessed by the general ignorance of them among contemporary logicians.

On the basis of these arguments it can be concluded that the definition of logic Albert inherited from Avicenna [and Alfarabius?] is not a definition of logic as a special science at all. Rather the subject of the *Organon*, which need not be considered as having treated exhaustively of everything called "logic" nowadays, is the syllogism. Our criticism of Albert is not, however, entirely negative, for we are indebted to him for a clear statement of the distinction between the enthymeme and the syllogism, a distinction not recognized by the Greeks nor by the Renaissance Thomists or modern logicians. Undoubtedly it was Albert's appreciation of the radical difference between syllogism and enthymeme coupled with the idea that logic must give the general mode to all philosophy which caused him to take refuge in the very general definition of logic proffered by Avicenna. But once again his Arabic dependence must be uncovered. The notion that logic is the common mode of proceeding in philosophy, a notion he derives from Averroes this time, has no foundation in Aristotle's text nor in the extant commentaries of the Greeks. Logic, as comprehending both syllogism and enthymeme, is very definitely not a single thing.

The consequence of this new statement of the subject of the *Organon* is that the *Categories* are seen to belong to the science of the syllogism and study the term outside the syllogism and outside the declaration. What is the term in this state of isolation? Quite simply it is the accusation. Some modern scholars have eschewed this sense of the term in preference to the sense of *kategorein* as predicative utterance.²³ The arguments of Bonitz²⁴ that *kategoria* was used, in the *Metaphysics*, to designate a single utterance, outside of any predicative function, the internal evidence of the *Categories* themselves where (1 b 25) it is stated that these terms, taken *kata medemian symplokēn*, are either substance, quality, quantity etc. and finally the explicit testimony of Porphyry in his commentary on the *Categories* establish without doubt that "accusation" is the meaning of the word here. And Porphyry points out the exact similarity according to which this word was given a new meaning and use in philosophy. In the law court the accuser points his finger and cries, "thief" or "murderer" and the philosopher points or grasps something and says "stone" or "chair."²⁵

According to Porphyry the *Categories* study simple words independent of their function as nouns and verbs "according to the first institution of words" whereby they are significative of things and not the grammatical relations between words in a sentence. Ammonius describes the function of simple words in the *Categories* in similar terms.²⁶ The *Categories* study simple expressions outside their function as nouns and verbs. Boethius, who was unacquainted with Ammonius but indebted to Porphyry, gives a similar description.²⁷ And both Ammonius and Boethius describe the relation of the declaration to the syllogism in the same manner, fundamentally, as Albert.²⁸ None of the ancient authors mentions a science of definition. Nor does Thomas Aquinas, Albert's pupil, make mention of a science of definition to which the *Categories* belong.²⁹ Albert is seemingly alone in his error.

If the *Categories* do belong to a science of syllogism, what is it precisely that they describe in describing the accusation? First of all, they describe the fact that there are distinct accusations irreducible to a higher genus. Secondly, they describe the fact that there is accusation not only in substance but in the genera of the accidents which are in a subject. Already in the *Topics* Aristotle had noticed that each accusation told what something is as compared to the things in the same genus.³⁰ Hence there is a telling of what something is in regard to quantity or quality or even relation. Thirdly there is the description of that quality peculiar to terms predicated "as of a subject—*hos kath' hypokeimenou*." In such predication what is said of the predicate is also said of the subject. Such predication is distinct from accidental predication in which a term said of a predicate is not predicable of its subject.³¹

The description of predication "as of a subject" provides the true key to the explanation of the Aristotelian theory of syllogism. In this type of predication, which tells what, there is a definite order of predicability not found in accidental predication. In accidental predication it makes no difference, for example, whether we say the builder is pale or the pale man is a builder,³² nor is one term more universal than the other. In accusation there is an order, because accusation tells what and the term telling what must be more universal than the term it is predicated of. Hence, in accusation there is an irreversibility in predication which is manifested first in the case of the genus. "Genus" originally meant offspring and since there is an irreversible order of precedence in the relation of offspring to its father and generally of effect to cause, the first term assigned in a definition was called the genus to represent this irreversibility.³³ But such an irreversibility is essential to determining the position of the terms in a syllogism. Aristotle describes the middle term as either midway in position (*thesis*) or first in position or last in position. Position (*thesis*) refers to the relative universality of terms in themselves whereby they have a definite order of predicability. If such is the *thesis* of the terms, then we can understand why something else follows in the syllogism necessarily, just because they are so posited (*tithentai*). It is only insofar as these terms have an order of predicability among themselves and independent of our arbitrary arranging of them that they can be the cause of something following necessarily. If the position of the terms were arbitrary, then the absurdity of arbitrariness being the foundation of something necessary would ensue, an absurdity latent if not explicit in most modern descriptions of the syllogism. The syllogism is limited to predication "as of a subject." The enthymeme is based on accidental predication and its inference is one in which something follows not necessarily but with likelihood.

Texas Tech University
Lubbock, Texas

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¹Amable Jourdain, *Recherches Critiques sur L'Age et l'Origine des Traductions Latines d'Aristote*, (Paris, 1843 [reprint New York: Burt Franklin, 1960]), p. 74.

²*Avicenna Opera*, B. Cecilius Fabrianensis canonicus 1508 (Frankfort am Main: Minerva, G. M. b. H., 1961) p. 1. Albertus Magnus, *Commentaria in De Praedicabilibus, Tractatus I, caput I* (Paris: Ludovicus Vives, 1890), p. 4.

³Albert, *In De Praedicabilibus*, tr. I, c. VIII, op. cit., P. 21: "Et quoad ordinem inventa est scientia *Praedicamentorum*. Et quoad modum educendi unum de alio, inventa est scientia divisionum." Also, *In Librum Boethii De Divisione*, ed. Paulus Maria de Loe (Bonn: P. Hanstein, 1913), p. 14.

⁴Albert, *In De Praedicabilibus*, *op. cit.*, p. 11-12.

⁵Albert, *In Peri Hermeneias*, I, tr. I, c. I (Paris: Ludovicus Vives, 1890), p. 1.

⁶*Ibid.*, p. 2.

⁷This view of Albert's logic supposes that the process of definition is radically distinct from that of argument. Certainly Albert would agree with this (Cf., *De Praedicabilibus*, tr. I, c. V), but he is equally insistent that the ordering of predicable and subicible words leads to the treatise on declaration and then on to syllogism. *In Librum Boethii De Divisione*, c. 1, *op. cit.*; *In De Praedicabilibus*, tr. I, c. VII: *op. cit.*, p. 21.

⁸Ammonius, *Commentaria in Aristotelis Librum "De Interpretatione," Commentaria in Aristotelem Graeca*, vol. 4, part 5, ed. Adolphus Busse (Berlin: Georg Reimer, 1896), p. 9, l. 28-p. 10, l. 17; also *In Categorias Aristotelis Proemium, Commentaria in Aristotelem Graeca*, vol. 4, part 4, ed. Adolphus Busse, p. 10, l. 15-p. 13, l. 2.

⁹Themistius, *Analytica Posteriora Paraphrasis, Commentaria in Aristotelem Graeca*, vol. 5, ed. Wallies (Berlin: Georg Reimer, 1900), p. 43, lines 1-4.

¹⁰Duane H. Berquist, "Impediments to Traditional Logic," *Laval Theologique et Philosophique*, 24 (1968), 176.

¹¹Albert, *In De Praedicabilibus*, tr. I, c. 4, *op. cit.*, p. 8.

¹²Albert, *In De Praedicabilibus*, tr. I, c. 1, *op. cit.*, p. 1. Also, *In Peri* tr. I, c. 1, *op. cit.*, p. 11. Aristotle (995 a 12-14) does not actually say that logic is the common mode of philosophy. This statement derives from Averroes and runs through the commentaries to Aquinas. There is no Greek commentary on this passage in the *Metaphysics*, so there is no way of authenticating Averroes' version of it in terms of the Greek commentators.

¹³The points being made here are not at all foreign to Albert. He seems to use 'syllogism' analogously to syllogism, induction and enthymeme in the *Prior Analytics*. Also the thesis advanced here is reported by Albert, *In De Praedicabilibus*, tr. I, c. 4, *op. cit.*, p. 8; "Propter quod quidam dixerunt quod logica tota est de syllogismo et partibus syllogismi." He refutes this position [which differs from ours in saying that logic is only about the syllogism whereas ours says that the "Organon" is about the syllogism] by saying: determinantes commune subiectum. . . et quae species ejus."

¹⁴Albert answers an objection to the contrary in his commentary on *Peri Hermeneias*, I tr. I, c. 2, *op. cit.*, p. 5.

¹⁵Albert, *In De Praedicabilibus*, tr. I, c. 1, *op. cit.*, p. 3.

¹⁶Ammonius, *In Aristotelis De Interpretatione Commentaria, op. cit.*, p. 1, l. 24- p. 2, l. 1.

¹⁷*Prior Analytics, Aristotelis Opera Omnia*, ed. I. Bekker (Berlin: G. Reimer, 1831 [reprint 1960]), p. 24b, 11. 18-20.

¹⁸Aristotle, *Prior Analytics*, II, c. 2, 53 b 4-10.

¹⁹Albert, *In De Praedicabilibus* I, tr. I, c. 7, *op. cit.*, p. 20: ". . . quamvis hypotheticus [syllogismus] ad categoricum habeat reduci."

²⁰Albert, *In De Praedicabilibus*, tr. I, c. 5, *op. cit.*, p. 12.

²¹Thomas Aquinas, *In XII Libros Metaphysicorum Aristotelis Expositio*, ed. M. R. Cathala and R. M. Spiazzi (Rome: Marietti, 1964), Liber VII, lectio XV, n. 1614-18, p. 387; also Stephanus, *In Librum Aristotelis De Interpretatione, Commentaria in Aristotelem Graeca*, vol. 18, part 3, ed. M. Hayduck (Berlin: G. Reimer, 1885), p. 16, 11. 31-36.

²²Thomas Aquinas, *ibid.*

²³Gilbert Ryle, "Categories" in *Logic and Language*, 2nd series, ed. Antony Flew (Oxford: Blackwell's 1961), p. 65-66.

²⁴Herman Bonitz, *Ueber die Kategorien des Aristoteles* Sonderausgabe (Darmstadt: Wissenschaftliche Buchgesellschaft, 1967), p. 34-37.

²⁵Porphyry, *In Aristotelis Categorias Commentarium, Commentaria in Aristotelem Graeca*, vol. 4, part 1, ed. A. Busse (Berlin: G. Reimer, 1887), p. 56, 5-13.

²⁶Porphyry, *op. cit.*, p. 57, l 20-p. 58, l. 20. Ammonius, *In Categorias Proemium*, *op. cit.*, p. 11, l. 7-p. 13, l. 2.

²⁷Boethius, *In Categorias Aristotelis, Patrologiae Latinae*, ed. J. P. Migne (Turnhold, Belgium: Typographi Brepols, no date), t. 64, c. 161.

²⁸Boethius, *In Librum De Interpretatione Editio Secunda, Patrologiae Latinae*, *op. cit. supra*, t. 64, c. 398. Ammonius, *In Aristotelis De Interpretatione Commentaria*, *op. cit. supra*, p. 4, ll. 5-16. For Albert, see note 6 above.

²⁹Thomas Aquinas, *In Aristotelis Libros Peri Hermeneias Expositio*, ed. Raymond M. Spiazzi, (Rome: Marietti, 1955), Proemium, n. 2, p. 5.

³⁰Aristotle, *Topics, Opera Omnia*, *op. cit.*, Bk I, ch. 9, 103 b 35-36. This text disproves Gilbert Ryle's interpretation of Aristotle's "categories" as the different question words in ordinary language. Gilbert Ryle, *loc cit.*, p. 66.

³¹Porphyry, *In Aristotelis Categorias*, *op. cit.*, p. 81, ll. 3-22.

³²Alexander of Aphrodisias, *In Aristotelis Metaphysicorum, Commentaria in Aristotelem Graeca*, vol. I, ed. Hayduck, (Berlin: G. Reimer, 1891), p. 370, ll. 31-32.

³³Boethius, *Commentaria in Porphyrium a Se Translatum, Patrologia Latina*, *op. cit.*, t. 64, c. 89; Ammonius, *Commentarium in Porphyri: Isagogen, Commentaria in Aristotelem Graeca*, t. 4, part 3, p. 51, ll. 21-22.