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The Logic of the First Operation

As has been noted in a previous article,¹ the logic of the first operation is concerned with all those second intentions attached to objects known by the simple apprehension of the reason. Since definition is the principal work of the first operation and represents the perfection of the simple apprehension, the definition may be said to be the principal subject of the logic of the first operation. As has been indicated, however, this part of logic forms an essential part also of the art of argumentation as this art is distinct from definition. This article, therefore, will fall into two main parts, of which the first will treat of the art of definition and the second will be concerned with certain of those intentions known by the logic of the first operation which form part of the art of advancing from one truth to another.

I. THE ART OF DEFINITION

1. *Definition as the principal subject of the logic of the first operation*

For John of St. Thomas the subject of the formal logic of the first operation is the term ; the subject of the material logic of the same operation is the disposition of the universals according to the *Predicables* and *Predicaments*. A detailed criticism of the term as subject of this part of logic will be given in a third section of this article ; here it is sufficient to recall that John of St. Thomas arrives at this subject by a resolution of the form of argumentation into its elements rather than by a consideration of the object of this operation and the determined means by which the reason attains this object. With regard to the *Predicables* and *Predicaments*, he is right in attaching these to the first operation, but in so far as he considers them only in the measure that a knowledge of them is requisite for the formation of *per se* propositions, he fails to manifest adequately their role in the direction of the reason.

In determining the principal subject of this part of logic, it is essential that all question of the matter and form of argumentation be set aside as irrelevant. The work of logic is to direct the reason in the attainment of its object ; hence the questions to be answered with respect to the first operation are : what is its object ? and, what is the instrument through the formation of which the reason attains that object ? It is the instrument to be formed that constitutes the

1. THOMAS MCGOVERN, S.J., "The Division of Logic" in *Laval théologique et philosophique*, Vol.XI, 1955, n.1.

principal subject of this part of logic. Whether the logic that considers it should be called formal or material can be determined afterwards by an inspection of the natures of the second intentions involved in its formation.

The object of the first operation is the simple unknown, the *ignotum incomplexum* of St. Albert. Such an unknown is known when the reason has attained its essence and can answer the question : what is it? This can be effected only through definition ; we know what an object is when we can define it. Definition, therefore, is the principal instrument of the first operation of the reason, and the principal subject of this part of logic, which must, accordingly, teach what the definition is, the kinds of definition, the second intentions upon which the formation of definitions depends, and how to define.

A complete knowledge of the art of definition is extremely difficult to attain because there is no extant work of Aristotle, St. Albert, or St. Thomas on this subject. Consequently much of the doctrine about definition must be gathered from scattered passages in the works of St. Thomas and St. Albert and the sum of these in no sense forms a complete treatment.

2. Real and Nominal Definition

Definition is a kind of discourse which explicitly and perfectly states what the essence of the object is, distinguishing the object from all other things.¹ In this definition of definition the word discourse (*oratio*)² is the genus³ and it signifies a composition of words ordered by the reason. That the definition must be such follows from its end, as this is signified by the difference — which states what a given object is. By this is meant that the definition signifies the whole essence, so that there is nothing pertaining to it which is not included in the definition, nor anything in the definition which does not pertain to the essence ; since the definition so delimits (*de-finire*) the essence, it is

1. " Est autem terminus sive diffinitio, quaedam oratio explicite et per partes potentiae et actus significans quid essentialiter et substantialiter est esse rei diffinitae, ita quod perfectum esse sit demonstrans, et totum secundum partes, et ordinem ad ultimum, quod respectu omnium praecedentium est actus et complementum " (ST. ALBERT, *In I Topicorum*, Tract.II, c.2).

2. The latin word *oratio*, signifying a composition of words ordered by the reason, is difficult to translate into English. The word *discourse* will be used throughout, although *speech* or *composite expression* might also serve. *Discourse*, as a translation of *oratio* must be distinguished from discourse which is a translation of *discursus* and signifies an advance of the reason from the known to the unknown.

3. Or at least quasi-genus, since *oratio* is rather analogous than univocal as said of definition and, for instance, proposition, since the latter is perfect with respect to signification, while the former, because it does not state that anything is or is not, is not so. (Cf. ST. ALBERT, *In I Prior Anal.*, Tract.I, c.3).

also called a term.¹ Such a perfect manifestation of the whole essence demands that the definition be composed of names which represent the principles of the object and which represent them as they are actually ordered to one another in the object according to that which is potential and that which is as ultimate act. This cannot be accomplished by one word, but only by a composition of words; from its end, therefore, the definition is a discourse.² The manifestation of those intentions that govern the composition of concepts (and therefore of the words that signify them) necessary to effect definition will be the principal work of this part of the present article.

It must be noted that definition as just described is definition *simpliciter*. Because it is a discourse which succeeds in manifesting the *quid rei* it is called real definition. But there is another kind of definition which is definition in a secondary, or participated, sense. This is nominal definition which manifests not the *quid rei* but the *quid nominis*. The notion of nominal definition is not adequately explained if it is limited to the clarification of the meaning of a word by a better known word or through its etymology. Rather, any discourse that manifests the meaning of a word, and this includes all that do not manifest the essence of a real object, is a nominal definition. St. Thomas provides a striking example of the restricted meaning of real definition and the amplitude of nominal definition when he points out that anyone who knows a remote or proximate genus of the object signified by a name, together with certain of its accidents, knows only what the name means, and does not possess the definition of the thing.³ A discourse, therefore, which signifies this knowledge, in spite of its containing certain

1. "... Definitio ideo dicitur *terminus*, quia includit totaliter rem ; ita scilicet, quod nihil rei est extra definitionem, cui scilicet definitio non conveniat ; nec aliquid aliud est infra definitionem, cui scilicet definitio conveniat " (St. THOMAS, *In I Periherm.*, lect.4, [edit. Marietti] n.37).

2. " Dicit ergo *primo*, quod omnis 'definitio est quaedam ratio,' idest quaedam compositio nominum per rationem ordinata. Unum enim nomen non potest esse definitio, quia definitio oportet quod distincte notificet principia rerum quae concurrunt ad essentiam rei constituendam ; alias autem definitio non sufficienter manifestaret essentiam rei. Et propter hoc dicitur in primo *Physicorum*, quod definitio dividit 'definitum in singulare,' idest exprimit distincte singula principia definiti. Hoc autem non potest fieri nisi per plures dictiones : unde una dictio non potest esse definitio, sed potest esse manifestativa eo modo, quo nomen minus notum manifestatur per magis notum. Omnis autem ratio partes habet, quia est quaedam oratio composita, et non simplex nomen " (*In VII Metaph.*, lect.9, [edit. Marietti] n.1460). "... Necessarium esse omnem definitivam rationem esse ex pluribus nominibus. Ille enim qui definit, non faciet notificationem rei ponendo unum nomen tantum ; quia si poneret unum tantum nomen, adhuc definitum remanebit nobis ignotum " (*Ibid.*, lect.15, n.1614).

3. " Oportet enim scientem, hominem esse, et quaerentem, quid est homo, per definitionem, scire quid hoc nomen *homo* significat. Nec hoc esset nisi aliquam rem quoquo modo conciperet, quam scit esse quamvis nesciat eius definitionem. Concipit enim hominem secundum cognitionem alicuius generis proximi vel remoti et aliquorum accidentium, quae extra apparent de ipso " (*In de Trinitate*, [edit. Marietti] lect.2, q.2, a.3, resp.).

essential and accidental notes of the object signified, remains a nominal definition ; it does not manifest the *quid rei*. Cajetan is in complete accord with this doctrine when he holds that knowledge of the meaning of the name, as distinguished against knowledge of the essence of the thing (which can be attained only through the proper principles of the object), can be acquired through accidents of the object, or even its essentials, through common principles or gestures ;¹ therefore any discourses expressing such knowledge are nominal definitions only. St. Albert opposes to real definition (*definitiones propriae*), which perfectly manifests the essence of the object, "aliquid aliud quod diffinitionem imitatur incomplexi aliqua declaratione,"² and gives as the various kinds of the latter definition through material and efficient cause and definition through accidents, whether common or proper, and all other explanations through a word or expression better known than the name.³

From the above observations on real and nominal definition it is clear that John of St. Thomas' definition of the two *per modum unius* ("oratio naturam rei aut termini significationem exponens")⁴ is a bad one. The two kinds of definition differ essentially, since the one manifests the *quid* of a real object, while the other explains only the *quid* of a word.⁵ The two, therefore, must not only be defined separately, but treated separately.

Here real definition, which is definition in the proper sense, will be treated first. In its regard it may first be pointed out that in the various sciences the possibility of real definition is greatly limited, for such definition presupposes, obviously, an object whose essence is perfectly knowable to us. In his commentary on the *De Trinitate* of Boethius, St. Thomas points out that because the human intellect is dependent on the phantasm, such objects are of two kinds. First, those whose essences can be known immediately are limited to those of which there are phantasms, namely, sensible things, to the exclusion of immaterial. Secondly, the essences of certain immaterial objects can be known mediately, that is, through the mediation of sensibles, in those cases where their essences are sufficiently expressed by sensible

1. "... Cognoscere quid nominis nihil est aliud quam cognoscere ad quod tale nomen habet relationem ut signum ad signatum. Talis autem cognitio potest acquiri per accidentia illius signati, per communia, per essentialia, per nutus, et quibusvis aliis modis " (*De Ente et Essentia*, p.19).

2. *De Praedicabilibus*, Tract.I, c.6.

3. *Ibid.*

4. *Cursus Philosophicus, Logica*, I P. Lib.III, c.3, (edit. Reiser) p.19.

5. "... Et haec est essentialis differentia inter quid nominis et quid rei, scilicet quod quid nominis est relatio nominis ad signatum : quid rei vero est rei relatae seu significatae essentia. Et ex hac differentia sequuntur omnes aliae, quae dici solent, puta quod quid nominis sit non entium, complexorum . . . relatio enim vocis potest terminari ad non entia in rerum natura, et complexa . . ." (CAJETAN, *loc. cit.*).

things. St. Thomas gives as an example of the latter the second intentions which form the subject of logic.¹ When the essence is not knowable to us, either immediately or mediately, then only a nominal definition of one kind or another can be given ; for this reason it pertains to the logic of the first operation to provide certain rules governing nominal definition.

With regard to knowledge through real definition of natures that the human reason can know immediately, namely, the essences of sensible things (the objects of philosophy of nature and mathematics), a question immediately arises regarding logic, that is, whether the direction of logic is possible and necessary with respect to knowledge of such essences. The answer to the question would seem to be negative, for the role of logic is to direct operations of the reason so that the object may be attained without error ; but here the object in question is the proper object of the human mind, and no faculty can err *per se* with respect to its proper object without ceasing to be a faculty. Hence it appears that in respect to knowledge of the essences of sensible things, the direction of logic is neither necessary nor possible.

A comparison with the external senses makes this problem clear. The proper object of the sight, for instance, is color, and the eye cannot fail to see the color which is presented to it, except accidentally, that is, because of a defect in this or that particular eye. There is no question of the operation of the eye being perfected by an art. Similarly, since the proper object of the human reason is the essences of sensible objects, it would seem to hold true that in respect to such objects there must be perfect determination, such that on the presence of the sensible image in the phantasm, the intellect is determined to a grasp of its *quid*. To answer this difficulty, it is necessary to consider the nature of the first operation of the reason, comparing the intelligence with the senses from the point of view of the perfection of the proportion of these faculties to their proper objects. The correct solution of the problem is of the greatest importance for the understanding of why the logic of the first act constitutes in itself a division of logic and of the nature of the direction provided to this operation by the *Predicables* of Porphyry and the *Predicaments* of Aristotle.

1. "... Ad hoc autem quod de re aliqua sciamus quid est, oportet quod intellectus noster feratur in ipsius rei quidditatem sive essentiam vel immediate vel mediantibus aliquibus, quae sufficienter eius quidditatem demonstrant. Immediate autem ferri non potest intellectus noster secundum statum viae in essentiam divinam et alias separatas essentias, quia immediate extenditur ad phantasmata, ad quae comparatur sicut visus ad colorem . . . Et sic immediate potest concipere intellectus quidditatem rei sensibilis, non autem alicuius rei intellectualis . . .

Sed quaedam invisibilia sunt, quorum quidditas et natura perfecte exprimitur ex quidditatibus rerum sensibilibus notis, et de talibus intelligibilibus possumus scire *quid est*, sed mediate, sicut ex hoc quod scitur quid est homo et quid est animal, sufficienter innotescit habitudo unius ad alterum, et ex hoc scitur quid est genus et quid est species " (*In de Trinitate*, lect.2, q.2, a.3, resp.).

3. *Position of Cajetan*

Cajetan, faced with this problem, holds to the perfect determination of the intellect, such that the proportion of the sense and the intellect to their proper objects is the same. In determining the role of Aristotle's *Predicaments* in the direction of the first operation, he proposes that this operation can be considered in two ways: "... Uno modo per se, id est in sua puritate; alio modo per accidens, id est ut ei admiscetur aliquid alterum, puta compositio vel applicatio."¹ Here are opposed the first act considered in itself and the first act considered in conjunction with certain compositions which are accidental to it.

Regarded according to the second consideration here proposed, that is, as it accidentally implies composition — for instance, as the whole or part of the definition is predicated of the thing defined, or as the parts of the definition are composed with one another — ² the first operation requires direction. This must assume the form of a treatise about definition which must determine "what the definition is, and of what and what kind of principles it is constituted, and its properties and subjective parts."³ Such a treatise is necessary because the composition implied in definition, or in the predication of the definition, admits of the possibility of error. What is of importance is that such error is conceived by Cajetan as being accidental to the first act itself, since the composition implied in the definition is so conceived. Therefore the treatise on definition is out of place at the beginning of logic, since logic must begin with the direction of the first act itself. According to Cajetan, this treatise should immediately precede the study of dialectic, ordered to this art as it deals with problems about definition.⁴ As a corollary to this position, it follows for Cajetan that there is no need to study the *Predicables* before the *Predicaments* because the former are ordered to the art of definition whereas the latter look to the direction of the first act "in its purity."⁵

All question of composition is for Cajetan, then, accidental to the first act considered in itself — "in its purity." Yet, Aristotle's

1. *In Praedicamenta Aristotelis*, prologus, (edit. Laurent) p.2.

2. "... Tripliciter errare contingat diffiniendo, scilicet in applicatione partium diffinitionis ad diffinitum, et in coniunctione partium diffinitionis inter se, et in applicatione totius diffinitionis ad diffinitum " (*Ibid.*).

3. "Si autem loquamur de prima operatione intellectus per accidens, sic regula eget, et eius regula est ars diffinitiva, sicut regula discursus est ars syllogistica... Esset autem illius artis determinare quid sit diffinitio et ex quibus constat, et qualibus, et de passionibus eius, et partibus subiectivis " (*Ibid.*).

4. "... Et ante librum Topicorum haec ars locum habet quum regulativa est intellectus ad notitiam incomplexi, dialectica vero regulat ad notitiam complexorum problematum " (*Ibid.*).

5. "... Et quia... diffinire genus, speciem, etc., diffinitivae artis opus est, ideo liber iste (*Praedicamenta*) naturaliter praecedit librum Porphyrii " (*Ibid.*, p.7.).

Predicaments is ordered to the direction of the first operation so considered. Faced with the problem of determining the role of this work, Cajetan makes a distinction in the kinds of direction which may be considered in respect to the first act in itself — that between direction on the part of the operation itself, and that on the part of the object. Applying this distinction, he finds that there is no need for direction on the part of the operation :

Si loquamur de prima operatione intellectus per se, sic ex parte sui regula non eget dante ei rectitudinem qua ad objectum absque errore pertingat, quoniam intellectus secundum primam operationem aut totum aut nihil attingit . . . et consequenter cum omnis error in componendo vel dividendo vel discurrendo, etc., contingat, prima operatio per se expers est erroris.¹

Since, therefore, the first act in itself is free from error, attaining either the whole or nothing, the direction provided by the *Predicaments* is a direction on the part of the object only :

Eget tamen regula ex parte objecti, dante ipsi intellectui facilitatem et promptitudinem ad attingendum suum objectum : et hoc fit per librum istum. Erat siquidem ens incomplexum, quod est objectum primae operationis, confuse dispersum et obscurum in universo, ita ut si simplex puta albedo praesentata esset, quod quid eius intueri difficilimum foret, quum confusione quadam albedinis natura cum figuris, cum quantitate, cum substantia, cum relatione mixta est. Modo autem distinctis rerum ordinibus et adunatis cuiusque ordinis rebus ad decem incomplexa, insignita suis proprietatibus, velut quibusdam figuris, facile et prompte circa quodcumque incomplexum audemus intellectus aciem figere.²

The need for a rule, therefore, for the first operation "in sua puritate" is founded not on the possibility of error, but only on "ease and promptitude." Its work is merely the dissipation of the confusion on the side of the objects so that the intellect can get at each essence. If whiteness alone is presented to the intellect, there is perfect determination with regard to its *quid*.

Cajetan's distinction between the rule on the part of the act and that on the part of the object is itself impossible, since all direction of the acts of the mind by logic consists in ordering objects. But the more fundamental point in his doctrine is his view of the intellect in its first act as being so proportioned to its object that it needs no other direction than the isolation of that object. In other words, for Cajetan the intellect is as determined with respect to the *quid* as are the senses with respect to the proper sensibles. This opinion, and the view of composition as accidental to the first act *in sua puritate*, and the conclusion following from these touching the role of the *Predi-*

1. *Ibid.*, p.2.

2. *Ibid.*

cables and *Predicaments* must be examined in the light of certain considerations from St. Thomas.

4. *Doctrine of St. Thomas*

First, for St. Thomas, exclusion of all deception with respect to the proper object belongs to the very definition of cognoscitive faculty as such : . . . "Ad proprium objectum unaquaeque potentia per se ordinatur secundum quod ipsa ; quae autem sunt huiusmodi, semper eodem modo se habent. Unde, manente potentia, non deficit eius iudicium circa proprium objectum. Objectum autem proprium intellectus est quidditas rei."¹ The external senses, for example, are infallible with respect to their proper sensibles, except for that deception which may result from a particular defective organ, and the same principle applies to the intellect with respect to the essences of sensible objects : "Sicut visus nunquam decipitur in proprio objecto, ita neque intellectus in cognoscendo quod quid est. Nam intellectus nunquam decipitur in cognoscendo quod quid est homo."² And the reason for this : "... Quia quod quid est est primum objectum intellectus."³

Yet, in spite of this insistence on the *per se* infallibility of all faculties, including the intellect, with respect to their proper objects, St. Thomas nevertheless admits the possibility of deception with respect to the essences of sensible things. For instance :

. . . Circa quidditatem rei, per se loquendo, intellectus non fallitur ; sed circa ea quae circumstant rei essentiam vel quidditatem, intellectus potest falli, dum unum ordinat ad aliud, vel componendo, vel dividendo, vel etiam ratiocinando . . . Per accidens tamen contingit intellectum decipi circa *quod quid est* in rebus compositis ; non ex parte organi, quia intellectus non est virtus utens organo ; sed ex parte compositionis intervenientis circa definitionem, dum vel definitio unius rei est falsa de alia, sicut definitio circuli de triangulo ; vel dum aliqua definitio est in se falsa, implicans compositionem impossibilem.⁴

The falsehood may appear when the definition is expressed in the second act of the mind — for instance, according to St. Thomas' example, if the definition is predicated of something whose definition it is not. Since every definition is virtually an enunciation, any definition which misrepresents the essence of the thing defined will thus become a source of falsity — for example a definition of knowledge as a kind of *actio*, or of a triangle as a kind of quality. The other possibility mentioned by

1. *Ia Pars*, q.85, a.6, c.

2. *In III De Anima*, lect.11, (edit. Marietti) n.762.

3. *Ibid.*

4. *Ia Pars.*, q.85, a.6, c.

St. Thomas is that where the falsehood is manifest within the definition itself, in the case where the notes composed are mutually repugnant. The point of importance is that no matter how the error manifests itself, in either case it implies an intellect which is simply deceived as to the essence of one or the other of its proper objects : "Contingit intellectum decipi circa quod quid est."

Yet St. Thomas adheres to the principle of the *per se* infallibility of all faculties with respect to their proper objects by pointing out that the error, when it occurs, occurs *per accidens*. If here the meaning of *per accidens* is not quite so evident as it is in the case of the accidental error in the external senses, where it indicates a defect in a particular organ, there is nevertheless an analogy between the two cases.

When it is said that the intellect cannot err *per se*, that means it cannot err as intellect. *Per accidens* therefore refers to something that does not pertain to the nature of intellect as such, and St. Thomas indicates that this is the "composition which intervenes regarding the definition." It is the import of these words that must be probed more deeply to arrive at an understanding of the proportion existing between the intellect and its proper object, in which proportion lies the root of the possibility of error.

The definition here in question is the definition of sensible objects. It was pointed out at the beginning of this article that every real definition, that is, which manifests the essence through its principles, must be a discourse, and the definition of the discourse there given, taken from St. Thomas' definition of discourse given in the *Metaphysics*, is a composition of words ordered by the reason. Words are signs of concepts and an ordering of words is the sign of an ordering of the similitudes. The mind, therefore, in defining, must order its representations to one another ; because of its imperfection it cannot, as does the angelic intellect, adequately represent its object by one simple act, and therefore it cannot adequately manifest it by a single word. When St. Thomas says that this composition of words required in definition is a work of the reason, reason must be taken as opposed to intellect, so that attainment of knowledge of the essence involves a composition whose principle is reason and which, accordingly, is not determined to one.

That reason must here be taken in this sense is made perfectly clear by St. Thomas when, treating of the potential character of the *verbum* which proceeds from the human mind, he teaches : "... Nam cum volo concipere rationem lapidis, oportet quod ad ipsam ratiocinando perveniam . . . Quando ergo sic ratiocinando, intellectus iactatur hac atque illac, nec dum formatio perfecta est, nisi quando ipsam rationem rei perfecte conceperit . . ." ¹ Here he explicitly makes use of the word reasoning to denominate the operation by which the mind

1. *Super Evangelium S. Ioannis Lectura*, c.1, lect.1, n.26.

arrives at its proper object, and the explanation of this denomination is found in what follows : the mind is in potency to knowledge of the *quid* in such a way that the conception of the form involves a passage from the known to the unknown in which "the intellect is moved this way and that." Such a passage from potency to act through a movement implying interdetermination is an operation of reason as such, and not of intellect as such.

The same doctrine is contained in another passage in which, contrasting the human mode of knowing with the angelic, he explicitly speaks of the act of apprehension as an act of reason :

Aliquando vero ad intima non pervenitur nisi per circumposita quasi per quaedam ostia ; et hic est modus apprehendendi in hominibus, qui ex effectibus et proprietatibus procedunt ad cognitionem essentiae rei. Et quia in hoc oportet esse quemdam discursum, ideo hominis apprehensio *ratio* dicitur, quamvis ad intellectum terminetur in hoc quod inquisitio ad essentiam rei perducit.¹

Knowledge of the essence involves a kind of discourse beginning from properties and effects known to the senses, and terminating in the apprehension of the essence ; the simple apprehension, therefore, is a movement from the known to the unknown and merits the name reason.

From the consideration of these texts emerges the meaning of the expression *per accidens* when it is said that the intellect can be deceived accidentally with respect to its proper object. As intellect it cannot be deceived, but even in its first operation the human mind is a reason and as such it is mobile, indetermined, and subject to error, and in need, consequently, of the direction of logic.

From the consideration that, with respect to knowledge of the essence, the intellect as such cannot err, yet as reason it can err, the question arises : to what kind of knowledge of its proper object is the intellect determined by nature, and for what kind of knowledge is the operation of the reason as such requisite, admitting, as it does, the possibility of error ?

The response to this question emerges from the consideration of certain texts of St. Thomas. First, in his commentary on the *De Trinitate* of Boethius, he points out that two kinds of knowledge of the essence can be distinguished — perfect knowledge and confused knowledge — and states that confused knowledge of the object must necessarily precede perfect :

Est tamen sciendum, quod de nulla re potest sciri *an est*, nisi quoquo modo de ea sciatur *quid est*, vel cognitione perfecta, vel saltem cognitione confusa, prout dicit Philosophus . . . quod definita sunt praecognita partibus definitionis. Oportet enim scientem hominem esse, et quaerentem, quid est homo, per definitionem, scire quid hoc nomen homo significat.²

1. In *III Sent.*, dist.35, q.2, a.2, sol.1.

2. In *de Trinitate*, lect.2, q.2, a.3.

The quest to know what something is by definition necessarily presupposes some knowledge of what the thing is — at least enough to enable us to attach the name to the thing ; unless we have some knowledge of what the name means, we cannot ask the questions : is it ? and, what is it ? This knowledge of the *quid* that precedes the asking of these questions is the confused knowledge mentioned by St. Thomas in the text ; that attained by the definition is the perfect knowledge.

That the object to be defined is known by a confused knowledge prior to its definition is taught also in the *Summa Theologica*. St. Thomas, answering the objection that the particular is known to us prior to the universal, because the thing defined is less universal than the parts of the definition, but known prior to them, points out that a part can be considered in two ways : first, absolutely, or in itself, and in this way there is no reason why the part cannot be known prior to the whole ; secondly, as part of some particular whole, and in this way it is necessarily known posteriorly to the whole. He exemplifies this by pointing out that a house is known as a certain confused whole before all its parts are distinguished. He then applies this common doctrine to the case of definition, pointing out that the principles that define the object, considered absolutely, must be known prior to the object defined, otherwise they could not be principles of knowledge of it. But what is most important for the present problem is what follows : St. Thomas concedes that the object defined is known prior to the parts of its definition, stating that the former is known confusedly before a distinct knowledge of it is attained by definition : “. . . Prius enim cognoscimus hominem quadam confusa cognitione, quam sciamus distinguere omnia quae sunt de hominis ratione.”¹

Similarly, in his commentary on Aristotle's *Physics*, he remarks that the object defined stands to the principles that define it as an integral whole to the parts that are actually in it. Although it is the object defined that is signified by the name, it does not follow that anyone who apprehends the meaning of the name, and uses that name, apprehends the principles that define the object ; for the use of the name, he need know the object only as a confused whole. Then when he acquires the definition he knows the whole distinctly by being in possession of its parts.²

1. “. . . Pars aliqua dupliciter potest cognosci : uno modo absolute, secundum quod in se est ; et sic nihil prohibet prius cognoscere partes quam totum, ut lapides quam domum. Alio modo secundum quod sunt partes huius totius ; et sic necesse est quod prius cognoscamus totum quam partem. Prius enim cognoscimus domum quadam confusa cognitione, quam distinguamus singulas partes ejus. Sic igitur dicendum est quod definitientia absolute considerata sunt prius nota quam definitum (alioquin non notificaretur definitum per ea) ; sed secundum quod sunt partes definitionis, sic sunt posterius nota. Prius enim cognoscimus hominem quadam confusa cognitione, quam sciamus distinguere omnia quae sunt de hominis ratione ” (*Ia Pars*, q.85, a.3, ad 3).

2. “. . . Ponit aliud signum de toto integrali et intelligibili. Definitum enim se habet ad definientia quodammodo ut totum integrale, inquantum actu sunt definientia in

Since the attainment of a distinct knowledge of the essence requires an advance from the known to the unknown by the operation of the reason, it is only to a confused knowledge of its proper object that nature determines the intellect so that no error is possible.

By way of description of this confused knowledge, it may be said that by it man knows that the object is something of a determined nature, differing from other objects, although this nature is as yet unknown. It necessarily includes the note of being. It is a knowledge that enables man at least to designate the object signified by the name ; an attempt to formulate it into a definition will usually involve some sensible accidents of the object.

With respect to this confused knowledge, it must be noted that what is naturally known is the first principle of all acquisition of new knowledge ;¹ hence the confused knowledge provides the first principles from which must begin the advance of the reason to the acquisition of distinct knowledge through definition. These first principles are the notions of being, one, good, and the like, which are the first concepts of the intellect and serve as certain *rationes seminales* from which all other knowledge follows :² “. . . Similiter in intellectu insunt nobis etiam naturaliter quaedam conceptiones omnibus notae, ut entis, unius, boni, et huiusmodi, a quibus eodem modo procedit intellectus ad cognoscendum quidditatem uniuscuiusque rei, per quem procedit a principiis per se notis ad cognoscendas conclusiones.”³ Since the more common is always the principle of knowledge of the less common,⁴ the natural order of procedure of the reason is to begin from the most common, naturally known, notion of being, and to proceed through the less common to the particular.

From these considerations the error of Cajetan becomes apparent. Unlike the external senses, the intellect is by no means perfectly pro-

definito ; sed tamen qui apprehendit nomen, ut puta *hominem* aut *circulum*, non statim distinguit principia definitiva ; unde nomen est sicut quoddam totum et indistinctum, sed definitio *dividit in singularia*, idest distincte ponit principia definiti ” (*In I Physicorum*, lect.1, [edit. Marietti] n.10).

1. “ Talium igitur regulas et principia dare est logici ad incomplexi cognitionem, per quae a principiis per se cognitis incipiat et deveniat in cognitionem eorum quae quaeruntur : non enim omnia possunt esse incognita : quia sic quaerendo procederetur in infinitum. Principia enim prima sunt quasi semina per naturam cognitioni hominis inserta, ex quibus quasi seminibus magni oriuntur fructus scientiarum de his quae cognoscuntur per ipsa ” (ST. ALBERT, *De Praedicabilibus*, Tract.I, c.6).

2. “ Similiter etiam dicendum est de scientiae acquisitione ; quod praeexistunt in nobis quaedam scientiarum semina, scilicet primae conceptiones intellectus, quae statim lumine intellectus agentis cognoscuntur per species a sensibilibus abstractas, sive sint complexa, ut dignitates, sive incomplexa, sicut ratio entis, et unius, et huiusmodi, quae statim intellectus apprehendit. Ex istis autem principiis universalibus omnia principia sequuntur, sicut ex quibusdam rationibus seminalibus ” (*Q. D. de Veritate*, q.11, a.1, c.).

3. *Quaestiones Quodlibetales*, Quodl.VIII, (edit. Marietti) q.2, a.2, c.

4. Cf. *Ia Pars*, q.85, a.3, c.

portioned to its proper object, but for a distinct knowledge thereof it must advance by its own activity from knowledge provided by nature :

Visus enim corporalis non est vis collativa, ut ex quibusdam suorum objectorum in alia perveniat ; sed omnia sua objecta sunt ei visibilia, quam cito ad illa convertitur . . .

Sed potentia intellectiva, cum sit collativa, ex quibusdam in alia devenit ; unde non se habet aequaliter ad omnia intelligibilia consideranda ; sed statim quaedam videt ut quae sunt per se nota, in quibus implicite continentur quaedam alia quae intelligere non potest nisi per officium rationis ea quae in principiis continentur, explicando.¹

It is this need of an advance from the naturally known to the unknown "per officium rationis" within the apprehension itself that Cajetan failed to see. Once it is seen, it is evident that composition is essential and not accidental to the first operation *in sua puritate*, and that, consequently, although the possibility of error is *per accidens* with respect to the intellect as such, it is *per se* with respect to the reason which must intervene for acquisition of distinct knowledge. There is, therefore, need of a rule to guide the first operation itself ; for as soon as the mind leaves the plane of natural determination and proceeds by its own activity to knowledge of the unknown, it has *per se* need of direction. The provision of this direction is the work of the *Predicables* and *Predicaments*, the science of division, and the science of definition.

5. The "Predicables," "Predicaments" and Science of Division

Every definition is formed by a certain composition of concepts. The reason, however, cannot compose its concepts so as to know the essence unless it previously knows the concepts that are constitutive of that essence. Because of this, the first work of logic must be the manifestation of the principles that define things.

St. Albert provides a brief summary of the steps by which logic effects the manifestation of these principles :

. . . Ad diffinitionem habendam necessarium fuit praemittere diffinibilium et diffinientium inventionem et acceptionem : ad quod necessarium fuit ponere ea secundum quorum rationem praedicabilia reducuntur ad ordinem, et secundo fuit necessarium ponere qualiter ipsa praedicabilia ordinata sunt, et tertio qualiter ex divisione colligitur cujuslibet incomplexi diffinitio.²

The manifestation of the *praecognita* of definitions is effected in three steps. First, because in order to define, the concepts must be disposed

1. *Q. D. de Veritate*, q.11, a.1, ad 12.

2. *In I Periherm.*, Tract.I, c.1.

according to a certain determined order or relation to one another, the intentions according to which the concepts (here called *praedicabilia* for a reason that will be explained below) must be ordered, must be determined. Secondly, the principles themselves must be ordered according to these intentions. The first of these steps is the subject of Porphyry's *Predicables*, the second that of Aristotle's *Predicaments*. Thirdly, from the knowledge provided by these two works, the reason must proceed by the method of division to the discovery of the proper principles of particular objects; this procedure is directed by the science of division.¹

The first work of logic is the determination of the intentions according to which the concepts must be ordered to manifest the essences of things. In view to the discovery of these intentions it may first be remarked that the reason knows by predication, that is, by saying one of another, or denying one of another. Although in the definition itself there is no predication, yet the definition can be said of the object defined, and, moreover, the elements that compose the definition are forms that can be said of that object. For this reason, predicability, or the relation attached to the simple concepts which permits their predication, is presupposed to all composition of the reason and must be the first subject of the consideration of the logician. A form, however, is predicable of others only because it is in them, or because it is communicable to them, that is, because it is a universal.² Hence the forms that define and which must be ordered by logic, are universals. The intentions governing the disposition of the universals, or predicables, must necessarily be their *ratio universalitatis* or *ratio predicabilitatis*, that is, their mode of being in and of being said of their inferiors.³ There are five modes of universality. Of these, three — genus, species and difference — are modes of being in and of being said of essentially; two — property and accident — are modes of being in and being said of accidentally.⁴ These five modes are the intentions according to which the universals are ordered.

1. "... Ratio qua fit ordinatio primum in Porphyrio tradita est. Ordinatio autem prout est in ordinatis, traditur in scientia libri *Praedicamentorum*, et in scientia sex principiorum, et in scientia divisionum" (ST. ALBERT, *De Sex Principiis*, Tract. I, c. 1).

2. "... Si ratio praedicabilis de aliis secundum veritatem attendatur, proprie et vere praedicari de alio non potest, nisi quod inest illi de quo praedicatur... Et per hoc quod inest, sequitur de necessitate, quod communicabile sit omnibus quibus inesse significatur. Communicabile ergo multis est secundum aptitudinem et in multis et de multis. Omne autem quod sic inest, et hac ipsa de causa praedicabile est. Ratio ergo et causa praedicabilis est, quod sit universale" (ST. ALBERT, *De Praedicabilibus*, Tract. II, c. 1.).

3. "... Cum ergo primus actus rationis (qui scientiam ignoti investigat per notum) sit ordinatio praedicabilium, ordinatio autem praedicabilium cognosci non potest, nisi sciatur per quam rationem praedicabile sit id quod praedicatur; quae ratio sumitur ex hoc, quod praedicabile est..." (*Ibid.*).

4. For the sufficiency of the five predicables, see *ibid.*

The order according to which the universals are disposed is contained in the notions of the predicables themselves. For genus, by definition, is "that under which the species is placed by direct and immediate supposition,"¹ and species, in turn, is that which is placed under a determined genus.² The diverse species must be ordered under the genus, from which they are drawn by opposite essential differences, which are added "from the side for the determination and contraction of the genus."³

The notions of genus and species are fulfilled most properly in only one genus, the supreme genus, which, because it has no genus superior to it, is only genus,⁴ and one species, the ultimate species, which is only species⁵ and in no way a genus, being said of a multitude which differ only numerically.⁶ The disposition of the universals begins with one supreme genus and ends with a plurality of ultimate species. The descent from the supreme to the ultimate extremes by way of division through opposite differences gives rise to and passes through certain intermediate, or subalternate genera which are species with respect to the genera above them and genera with respect to the species below them. Such a descent, therefore, gives rise to the disposition of predicables of which the Porphyrian tree in the genus of substance is the familiar example.

The disposition of the universals according to this order conduces to definition because the definition of the species is attained by the division of the genus proximate to it by the differences.⁷ The proper specific difference composed with the proximate genus results in the definition of the species; only by universals said according to these intentions can perfect definition be achieved. The notions of property and accident must be known because there are universals said according to these intentions and care must be taken that no genus be divided according to anything so said.⁸

1. "... Genus est cui supponitur species directa et immediata suppositione" (ST. ALBERT, *De Praedicabilibus*, Tract.III, c.2).

2. "Secundum autem intentionem quae est apud Philosophos dicimus speciem describentes, quae est posita positione ordinis naturae et participationis sub assignato genere" (*Ibid.*, Tract.IV, c.1).

3. "... Differentia... adjungitur lateraliter ad generis determinationem et contractionem" (*Ibid.*, c.2).

4. Cf. *ibid.*, c.3.

5. Cf. *ibid.*

6. *Ibid.*

7. "Ex his igitur ostenditur, quod in prooemio istius libri dictum est, quod scilicet notitia universalium valet et utilis est ad divisiones et ad diffinitiones; quia secundum differentias quae faciunt aliud, divisiones faciunt generum in species: et secundum easdem et per easdem diffinitiones specierum assignantur, eo quod diffinitiones verae sunt ex genere et talibus differentiis" (*Ibid.*, Tract.V, c.1).

8. "Est autem [liber *Praedicabilium*] necessarium et utile ad diffinitionum assignationem: quae omnes prout praedicabiles sunt, ex genere et differentiis constituuntur, in

It is clear that knowledge of the intentions themselves according to which the universals must be disposed in no way provides adequate direction to the reason seeking knowledge of the *quid*. This is no more than a first step ; the essential work of logic is the disposition of the universals themselves according to these intentions : "Sequitur igitur nunc determinare de his quae secundum rationem praemissam ad se invicem sunt ordinanda secundum genera, species, differentias, propria, et accidentia : hoc enim solum est in quo perficitur rationis ordinatio".¹ This disposition is the work of Aristotle's *Predicaments*. Since it cannot be effected unless the intentions governing it are first known, the consideration of the *Predicables* must precede that of the *Predicaments* ; Cajetan, therefore, is in error in maintaining that logic begins with the *Predicaments*, and that the place of the *Predicables* is immediately prior to the *Topics*.

It is, of course, impossible that any work of logic order all the universals from supreme genus to *species specialissimae* within each of the categories. Such a complete disposition can be effected only through the progress of the various sciences. The work of the *Predicaments* is to manifest the universals only to the extent that knowledge of them is necessary for the various sciences, but cannot be acquired through their own proper light.

For the manifestation of the work of the *Predicaments*, it must first be recalled that in the confused knowledge of the object to which nature determines the mind, the object is grasped in the immediate, common and analogous notion of being. From this the reason must advance to knowledge of the defining principles through division of the supreme genus of the object as indicated above. But knowledge of the supreme genera, which constitute the primary division of the confused notion of being, is not given by nature ; it must be acquired. This knowledge is provided by the *Predicaments*, which determine the primary division of being into the supreme genera of substance and the nine accidents.²

In addition to determining the primary division, Aristotle proceeds to certain further divisions within certain of the supreme genera. Substance, for instance, is divided into first and second, knowledge of which division is essential because, although it is first substance that is "properly and principally and especially substance,"³ it is only second substance that can be a genus. Discrete and continuous quantity are divided into number and speech ; line, surface and body.

quibus cavere oportet ne aliquod accidentale ponatur. Non enim potest vitari malum nisi cognitum" (*Ibid.*, Tract.II, c.1).

1. ST. ALBERT, *De Praedicamentis*, Tract.I, c.1.

2. On the adequacy of this division, see ST. ALBERT, *ibid.*, c.7.

3. "... Substantia quae proprie et principaliter et maxime et tertio modo substantia dicitur, est quae nec de aliquo sibi directo subjecto in quo sit per naturam et intellectum praedicatur, nec est in subjecto aliquo" (*Ibid.*, Tract.II, c.2.).

Quality is divided immediately into four species : habit and disposition ; natural potency or impotency ; passion or passive quality ; form or constant figure. Provision of knowledge of these divisions is a necessary work of logic, because they cannot be known by the light of the various inferior sciences themselves, yet are essential for resolution of the definition into the naturally known ; without knowledge of these primary divisions, in other words, knowledge of the *quid* of the subject is impossible prior to the study of metaphysics.

The geometrician, for instance, by the light of his own science, may discover the genus of triangle as figure and so proceed to the definition of triangle from its proper principles, thus distinguishing it from the circle and the rectangle and putting himself in possession of the principle of knowledge of its properties. But the subjects studied in the science are continuous quantities, which are simply accepted. Hence in the measure that the light of the science cannot tell him what figure and continuous quantity are, he cannot know what his subject, the triangle is. Accordingly, to know the *quid* of the triangle, or to resolve his definition in the naturally known, he must depend upon logic to provide knowledge of those genera superior to figure. Similarly, the moralist can define virtue as a habit, but he needs the light of logic to define habit as a quality. St. Thomas gives an excellent example of defining according to the predicamental order in arriving at the definition of grace : after determining that grace places something in the soul, he then asks whether grace is a quality and then whether it is a habit.¹ Similarly, in determining the species of motion, Aristotle and St. Thomas proceed by the light of logic in examining each of the categories in turn to discover in which motion is to be found.² Within the category of substance, no division into subalternate genera, such as those given in quality, quantity, and *ad aliquid* is necessary, since by the light of his own science the philosopher of nature can divide corporeal substance into living and non-living. Accordingly, the divisions supplied by Aristotle are complete and adequate so far as the proper work of logic is concerned.

In addition to establishing the ten supreme genera as substance and the nine accidents, and providing the necessary divisions, Aristotle attaches to the principal ones — substance, quantity, relation, quality, action and passion — certain of their properties. These serve as a guide to the definer in the initial step of placing his subject in the proper category.

As remarked by St. Albert in the text cited above from his commentary on the *Perihermeneias*, for the formation of definitions the knowledge provided by the *Predicables* and *Predicaments* must be complemented by the science of division.

1. Cf. *Ia IIae*, q.110, aa.1-3.

2. Cf. *In V Physicorum*.

Two kinds of division would seem to be prerequisite to the formation of definitions. First of these is division of an integral whole into its component parts. As ordered to the knowledge of the essences of things, this kind of division makes known the proper material principles of the object to be defined. Thus, for instance, in the *Perihermeneias* the resolution of the enuntiation into the noun and the verb precedes the definition of the enuntiation, and is a principle of knowledge of the definition since it is the verb, as the sign of composition, that makes the enuntiation a discourse in which there is the true or the false. This mode of procedure — division into material parts prior to definition — is followed by Aristotle also in the *Prior Analytics* with respect to the syllogism, in the *Posterior Analytics* with respect to demonstration, and in the *Physics* with respect to mobile being.

The second kind is immediately ordered to definition, since it terminates in the manifestation of the formal principles of the object itself to be defined ; in this way it directly and immediately provides the *praecognita* by the composition of which the definition is effected. This is division of a genus into its species. Universals are confused wholes which are known distinctly by their division into their subjective parts. Thus, the supreme genera are known when they have been divided by their differences to the *species specialissimae*, as has been mentioned above. The defining principles of these species are determined by the division of the proximate genus by specific differences.

There is a third kind of division which also seems to be ordered to the knowledge of essences of things, but in a more remote way than the two kinds just mentioned. This is a division of a word into its meanings. This kind of division can serve as a principle of knowledge of things in so far as a better known meaning of a word can serve as a principle of knowledge of an unknown meaning, which is the definition of the object to be defined. This, in turn, is possible in the measure that the same name is imposed on different objects according as they are known in a certain relation to one another. Thus, for instance, St. Albert divides the latin word *genus* into certain of its meanings of which the first (in English, *kin*) is a principle of knowledge of the last, which is the second intention signified by the word *genus*.¹

Besides these three kinds of division, St. Albert mentions three others — division of a subject into accidents, of an accident into subjects, and of an accident into accidents.² All have in common that they are modes of passing from the known to the unknown in so far as they provide a distinct knowledge of what was previously known as a confused whole by distributing that whole into its parts. The ensemble of the six kinds would seem to constitute the subject of the science

1. *De Praedicabilibus*, Tract.III, cc.1-2.

2. *Ibid.*, Tract.II, c.1.

of division, which should provide rules governing the procedure in each. Such rules are provided by Boethius in his *Liber de Divisione*.¹

In addition to the disposition of the universals according to the predicamental order and the science of division, the art of definition must provide rules governing real definition,² definition of substance and of accidents, and nominal definitions. But what has been mentioned suffices to indicate that there is an advance from the known to the unknown within the first operation, and that this advance makes use of an instrument proper to itself. The direction provided by logic to the reason knowing the *quid* is in no way reducible to that provided to the reason knowing the true, and therefore, when logic is divided according to the objects known, constitutes a separate division of logic. It is clearly the principal part of the logic of the first operation.

From the considerations made thus far in this article, it is clear that the term 'simple apprehension' applied to the first operation can be misleading. The apprehension of the *quid* is a simple operation in the sense that by it the mind knows but one object ; in the first act there is no composition of diverse objects through predication as there is in the second ; there is no truth or falsity in the proper sense in the first operation. But the simplicity of the apprehension in no way excludes an advance from the naturally known to distinct knowledge nor the particular kind of composition that this advance requires.

II. THE LOGIC OF THE FIRST OPERATION AS PART OF THE ART OF ARGUMENTATION

Thus far the logic of the first operation has been considered in so far as it is concerned with definition. The predicables and the disposition of the universals in their categories have been regarded in the light of St. Albert's teaching that they form part of the art of definition in so far as the ordering of universals is presupposed to the actual formation of definitions. It is the doctrine of St. Albert, however, that this same disposition also forms part of the art of argumentation, in so far as it is presupposed to the actual formation of scientific argumentations.³ The *Predicables* of Porphyry and the *Predicaments* of Aristotle are, in other words, common to both arts. This doctrine may be elucidated by the presentation of certain examples of intentions known from these two works which are fundamental to the understanding of

1. BOETHIUS, *Liber de Divisione*, *Patrologiae Cursus Completus*, Series Prima (ed. Migne), Paris, 1847, T.64, cols.877b-887c.

2. For such rules, see ST. ALBERT, *De Praedicabilibus*, Tract.I, c.6.

3. See, for instance, *De Praedicamentis*, Tract.I, c.1 ; *De Praedicabilibus*, Tract.I, c.7 ; and T. MCGOVERN, S.J., "The Division of Logic," in *Laval théologique et philosophique*, Vol.XI, 1955, n.2.

the syllogism and, in particular, of demonstration. It may be noted that the art of definition is itself, of course, presupposed to demonstration because the definition of the subject is the middle term in demonstration *propter quid* in its perfection :¹ but the question here concerns the art of argumentation as divided against definition ; the examples here given are intended to manifest that the logic of the first operation forms part of the former art, while including the latter as its principal part.

As a first example, it may be pointed out that the notions of universal and predicable are presupposed to a distinct knowledge of the enuntiation, which, in turn, must be known for the formation of argumentations. The enuntiation must contain a verb as the sign of predication ; the reason for this is contained in what is known from the consideration of the universals, namely, that *inesse* is the cause of predicability.²

Second, and of greatest importance, is the consideration that unless the logic of the first operation is known, a complete understanding of syllogistic consequence itself is not possible. The reason for this is that the syllogistic consequence, which is caused by the sole position of the terms in the proposition, cannot be manifest or rendered so but by the principles *dici de omni* and *dici de nullo* which are themselves consequent to the notion of universal ; the syllogism itself, in other words, is nothing more than a consequent of universality.³ Similarly, the notions of major, minor, and middle terms follow from the nature of the universal and can be rightly understood only if the universal is known.⁴ A sign of this basic and fundamental character of the universal with respect to argumentation is found in John of St. Thomas' treatment of the syllogism. He is compelled by his initial division to study the syllogism (formal logic) prior to the universal (material logic) and is consequently unable to provide a distinct knowledge of syllogistic consequence ; if his order is followed, the intellect is, so to speak, held in suspense until the universal is reached in material logic.⁵ Similarly, John of St. Thomas is unable to provide a cor-

1. Cf. *In I Physicorum*, lect.1, n.1 ; *In de Trinitate*, lect.2, q.1, a.1. That the definition of the subject must be the middle term in demonstration follows from the doctrine taught in *In I Post. Anal.*, lect.5-14.

2. " Inesse autem in eo quod inest, causa est praedicationis de altero, sicut in scientia Universalium dictum est " (ST. ALBERT, *In I Periherm.*, Tract.III, c.1). " Quod autem dicitur quod [verbum] est semper eorum quae de altero dicuntur nota, propter compositionem dictum est quae concipitur in verbo : per hanc enim rem suam retorquet ad subjectum cui inest. Inesse autem est causa praedicationis de altero ; et ideo per rem suam et compositionem nota est eorum quae de subjecto praedicantur per hoc quod in subjecto sunt " (*Ibid.*, c.3).

3. Cf. ST. ALBERT, *In I Prior. Anal.*, Tract.II, particularly c.2.

4. Cf. ST. ALBERT, *ibid.*

5. Cf. *Cursus Philosophicus, Logica*, I P. Lib.III, c.5, (edit. Reiser) p.64. Here he points out that the principles *dici de omni et nullo* are *per se* known from the nature of the universal ; but he has not as yet treated the universal.

rect definition of major, minor, and middle terms, but can identify these intentions only by their appearance in, or absence from, the conclusion, and by the premisses in which they appear ;¹ actually, the premisses are named from the terms, not the terms from the premisses.

As a third instance of this same general dependence of the art of argumentation on the logic of the first operation, it may be noted that the disposition of the universals according to the predicamental order is presupposed to an understanding of the rules for the discovery of middle terms and to the application of those rules.²

This same disposition of the universals in their categories is presupposed, too, to the formation of demonstrative syllogisms. A conclusion can be resolved only into propositions which are *per se* according to either the first or second mode *dicendi per se* ;³ for the recognition of propositions *per se* in the first mode, the essential predicates of the subject must be known ;⁴ the recognition of propositions that are *per se* in the second mode presupposes a knowledge of the art of definition, particularly as this art looks to the definition of accidents.

With respect to dialectical reasoning, the science of the probable syllogism is dependent upon the logic of the first operation in so far as the notions of definition, property, genus, and accident, known in the first part of logic, are the foundation of the division of the predicates into four kinds, on which division, in turn, rests that of dialectical propositions and of the loci for the discovery of probable arguments.⁵

Lastly, the art of division seems to form part of the art of argumentation as well as of the art of definition. In so far as the disposition of the universals in their categories is presupposed to argumentation (in the ways just mentioned), the art of dividing a genus into its species is accordingly presupposed. Similarly, the division of a word into its meanings seems to form part of the art of argumentation because in all argumentations the same word must retain the same meaning in all propositions. It may here be noted that in the subordination of division both to definition and to argumentation seems to be contained the reason why division, although in itself a mode of knowing distinct both from definition and argumentation, does not constitute a separate part of logic. There are but two kinds of unknown : the simple is manifested perfectly by its definition ; the truth or falsity of a composite is known by argumentation. It seems that division of itself can never provide a perfect knowledge of either, but rather assumes always the nature of a step in the formation of a definition or an argumentation.

1. Cf. *ibid.*, c.4, p.63.

2. Cf. ST. ALBERT, *In I Prior. Anal.*, Tract.VI, cc.1-3.

3. Cf. *In I Post. Anal.*, lect.10 and 14.

4. Cf. ST. ALBERT, *De Praedicabilibus*, Tract.I, c.7.

5. Cf. ST. ALBERT, *In I Topicorum*, Tract.III.

It may be noted in closing that from the above remarks follows the necessity of beginning logic with the consideration of the first operation.

III. CRITICISM OF THE TERM AS SUBJECT OF THE LOGIC OF THE FIRST OPERATION

In brief, the term, as John of St. Thomas defines it, cannot be the subject of the part of logic that considers the simple apprehension because this operation terminates in either a confused or distinct knowledge of the object ; such knowledge is signified either by the name of the thing, or by a definition, either real or nominal ; hence the principal subject here is definition. When John of St. Thomas names the term as the subject of the logic of the first operation by his formula "*primum apprehendo terminos*," he is determining the subject according to something accidental to the first operation as such, that is, that the sign of what is known by it be a part of a further composition of the reason.

In arriving at his definition of the term, John of St. Thomas points out that logic, as a science, proceeds resolutely. It is necessary that there be some simple element in which the resolution effected by the science of logic terminates. Since, then, that which is last in the order of resolution is first in the order of composition, then this same last element in which all logical composites are resolved, will be the same from which all are composed. The composites mentioned by John of St. Thomas as being resolved by logic are the enuntiation (resolved into noun and verb) and the proposition (resolved into subject and predicate). The term, therefore, is a common element susceptible of contraction to the noun and verb, and the subject and predicate, and is accordingly defined as "*id ex quo simplex conficitur propositio*". Because the term is first in the order of composition, it is the first subject of the consideration of logic.

Here John of St. Thomas' error is apparent. It is true, of course, that logic is a speculative science and resolves its subjects into their integral parts. It pertains, however, to the logic of the second operation to resolve the enuntiation into the noun and the verb and to the consideration of the syllogism to resolve the proposition into subject and predicate. Hence, John of St. Thomas, in speaking of the terms of these resolutions, is already considering the subjects of the logic of the second and third operations. The logic of the first operation resolves the definition into its integral parts in so far as it teaches that the definition must be composed of proximate genus and specific difference.

Lastly, there is no such second intention as the term as John of St. Thomas conceives it. The resolution of the enuntiation ends with the noun and the verb because it is these kinds of words that

must be composed by the reason to signify the true ; the proposition is resolved into subject and predicate because it is predication that effects the syllogistic consequence. But the resolution of these works of the reason terminates with these intentions ; there is no second intention into which noun and verb, subject and predicate can be resolved and which is susceptible of contraction to all of them.

With respect to his consideration of the *Predicables* and *Predicaments*, John of St. Thomas is right in assigning these to the logic of the first operation and to the resolution *ex parte materiae*. But they are badly placed in his logic. His initial division of logic into formal and material forces him to consider the universal and the disposition of the universals, which should be the first considerations of logic, only after the enuntiation and the syllogism.

Since the power of a definition to manifest the essence of an object is entirely dependent upon what is contained in it and in no way hinges on the form (nothing can be said of this other than that it must be some composition of words), the logic of the first operation is rightly called material logic ; similarly, the relations of reason with which the logic of the first operation is concerned — genus, species, difference, and so on — are all founded on what is represented by the similitudes and have nothing to do with its form.

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