

consequences. But I have good reasons for thinking that contraception is intrinsically immoral, while I see no reasons for thinking that it is morally acceptable. And I believe a philosopher should declare what is, be a prophet for reality, give testimony on behalf of the truth as he sees it.

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SECTION V: LOGIC, Dr. Edward S. Simmons, Chairman

I. *Does Modern Symbolic Logic Contain Aristotelian Logic as a Part?*

I. INTRODUCTION

The title of this paper is a question which is intended to ask whether Aristotelian logic and modern logic may be called "logic" in the same sense; that is, if one were to define logic would he give the same definition to each of these, thereby making it true to say that the older accomplished in part what the newer achieves more extensively? In other words, can symbolic logic be regarded as an extension, a generalization of the formal logic of the *Organon*? Or, on the contrary, is the word "logic" equivocal as it is applied to these two disciplines?

The position I shall defend here is the following: "logic" is an equivocal name as it is applied to both the formal logic of Aristotle's *Organon* and the contemporary symbolic variety, which means that the two disciplines cannot be given the same definition. More determinately, the two logics are distinct enough so that they do not have a genus in common; and this, of course, implies that one does not contain the other in the way in which a logical or universal whole contains its part.

When one reads some of the contemporary literature on this subject one has the impression that, although present day logicians regard Aristotelian logic as a primitive and rudimentary discipline, nevertheless they do regard it as "truly logic" and as something that should not be thought of as different in *kind* from the modern development. Irving Copi has a few lines that seem to represent this view:

Logic, too has had a special technical notation developed for it. Aristotle made use of certain abbreviations to facilitate his own investigations, and modern symbolic logic has grown by the introduction of many more special symbols. The difference between the old and the new logic is *one of degree rather than of kind* (emphasis mine), but the difference in degree is tremendous.¹

Things that differ only in degree do not differ in kind, and therefore it would appear that my topic needs an airing. I hope that the discussion which follows contributes to the understanding of the nature of logic.

¹ *Symbolic Logic* (New York: The Macmillan Company, 1954), p. 8.

Let it be clear from the start that I do not claim to be the first to see the principal distinctions coming up for discussion here. On the contrary, others have gone before me in this respect, among whom I would like to mention in a special way, Henry Veatch of Indiana University, a philosopher who has defended the traditional logic against many of the unjust claims of its detractors, and Father Maurice Dionne, of Laval University, by whom I was first led to see what the subject of Aristotelian logic is.

My argument in this paper will proceed from the following principle: a science is one, in part, by reason of its subject matter. Or to put the same principle negatively, two sciences cannot be one if they have distinct subjects, that is, if they bear on two genera that are formally different. This principle accords not only with the Aristotelian tradition but modern practice as well, for it is generally admitted that one science has one subject matter. Consequently there is no need to expound upon the principle further.

Having established a starting point, the problem can be put still more determinately: do modern symbolic logic and Aristotelian logic have the same generic subject matter? If they do, then one could well be a further development of the other, which in turn would indicate that modern logic is related to the formal logic of the *Organon* (*Prior Analytics* and the *De Interpretatione*) as whole to part. On the other hand, if the two genera of subjects are not the same, then the word "logic" as applied to both the *Organon* and symbolic logic is equivocal. However similar they might be accidentally, the two could not, simply speaking, be the same. Each would be logic in a different sense. To begin, then, let us consider what the Aristotelian logicians consider the subject of logic to be.

II. THE SUBJECT OF LOGIC ACCORDING TO THE ARISTOTELIAN-SCHOLASTIC TRADITION

As a point of departure for this consideration, I would like to observe that if knowing things in terms of their principles defines our most sophisticated understanding of these same things, then the mind in pursuing such an understanding cannot avoid a knowledge of order. To consider things in relation to their principles is in fact to know an order, and therefore from the point of view of what is most perfect in human knowledge one cannot separate perfect understanding from a knowledge of order. With this in mind, then, I would like to borrow from St. Thomas some distinctions he makes in the introduction to his commentary on Book I of Aristotle's *Ethics*:

Order may be related to reason in four ways: (i) There is one kind of order which reason does not make but simply beholds, such as the order of things in nature. (ii) Then, there is a second kind of order which reason makes by its own act of consideration; for instance the ordering of its own concepts, for they are words expressing the meanings of concepts (*voces significativae*).²

² Trans. Vernon J. Bourke, *Ethics* (New York: The Macmillan Company, 1951) p. 22.

Considered in general, he remarks, order may be divided four ways, into four distinct genera, only two of which are relevant here. Because order implies a relation, and because a relation is a reference of one thing to another, it is evident that divisions and distinctions among different kinds of order must be justified according to the things which are ordered, that is, on the basis of the foundations of that order; and very plainly this is the ground for what is said in the lines quoted above. According to the distinctions made there, that order which belongs to the world of natural things is an order which the mind, most properly speaking, discovers. ("Natural" here means simply that which is given.) This is an order which is independent of the human intelligence for its constitution. (On the other hand, if at times and in part such an order is produced by human labors, it is the result of the latter only insofar as man is able to function as an instrument which aids or facilitates the coming about of natural events.) Furthermore, since the primary orientation of the human mind is toward an understanding of the actually existing world (as opposed to a possible one), a knowledge of this natural order constitutes the goal, the final perfection of the human mind. Knowledge of what actually exists and knowledge of what possibly (in the sense of not implying a contradiction) exists are at best knowledge in analogous senses; and plainly the former is the primary analogue.

The second genus of order is one which exists among our concepts, and this is an order which the mind itself produces when it compares and considers things. (As we shall use the term "concept" here, it will mean *the object as known, as present or as existing in the mind.*) Now this second category is an order which St. Thomas and other Aristotelians before him regarded as being the object which logic investigates and which therefore is the subject of its demonstrations.³ The relations that exist among the concepts are the subject matter of logic, and in the scholastic tradition they are called "second intentions."

It is important to note here that the concept, the object taken according to its existence in the mind, is a "first intention," whereas the second intention is the relation founded on that concept. The literature on this subject sometimes gives the impression that the concept, that is, the object as intentionally present, is taken to be the second intention and therefore the subject of logic. But this is not the case. The concept understood that way is the concern of epistemological investigations. But to repeat what we said above, as I understand it the Aristotelian position on the subject matter of the science of logic holds that this subject consists of the relations which the mind sets up between its concepts. Logic, therefore, is directive of the acts of the mind insofar as it determines how such relations are to be constituted in order that the mind may proceed from things which are better understood by it to others that are less completely or less perfectly grasped. Because the mind must move from what it knows to what it does not know, one of its acts is principle with respect to another, and this is what introduces an order into the activities of the mind. Consequently these relations

³ See St. Thomas, *IV Meta.*, lect. 4.

which the mind produces within itself are instruments of manifestation; they are a means which enable us to understand the more obscure through the medium of the more plain. Furthermore, from this it becomes evident that because logic is a tool and a means to an end, it is not a science which by its nature is a good or goal in itself. Since its subject matter is *by nature* an instrument, the value of logic lies in its usefulness in coming to know more obscure first intentions which it helps to manifest. One cannot say, then, that Aristotelian logic is by nature something to be studied as a system in itself. (This does not mean, of course, that we should not have people who spend their professional years studying logic. On the contrary, all that such a doctrine declares is that the very subject matter of logic is for the sake of something else and is not a goal or end in itself.)

With these points noted, we must now return to the issue which is most relevant to this essay, and that issue is this: logic deals with relations which exist only in the reason and which do not have a counterpart (except perhaps accidentally) outside the mind, and which, therefore are but a means to an end. And as has been noted, such *beings of the reason* come into existence as a result of those comparisons which are of the very nature of human intellectual knowledge. But what is most crucial here is the fact that the relations which come about in this way are *not properties or attributes of things taken according to their existence in the real world*; rather, they are attributes of concepts, or in other words, of *objects taken according to their intentional existence or presence in the mind*.

An appreciation of this statement is fundamental to a grasp of the Aristotelian position; and therefore, in order to make that statement as clear as present circumstances permit I would like to draw attention to some of the grounds that support it.

Several reasons can be adduced to show that logical relations are not attributes of things but attributes founded directly and immediately on the concepts in the mind. The first of these is taken from the fact that the word "relation" in its primary meaning implies a reference of one thing to another and therefore a multiplicity. Moreover, the things which constitute the multitude are the foundations of the order. But what is more important, where the foundations of order are different the orders themselves differ. Hence if the plurality of concepts which logic orders does not have a direct counterpart in reality (a one to one correspondence, as one might say), then it follows that the relations are distinct. That there is no one to one correspondence between the plurality in the mind and the plurality in reality is plain first from the fact that the mind can unify what is multiple in reality. For example, insofar as we are able to consider many things according to that which they have in common, thereby knowing them in one concept, the mind unifies within itself what is many in reality. Second, insofar as the mind can distinguish or multiply within itself what is one in the exterior world, we again see that the relations in the mind have no counterpart in reality. An illustration of this is the fact that we consider man's animal nature and his

rational nature through distinct concepts, which when ordered together constitute a definition. Ontologically, however, man's rational and his animal nature are one. As a further illustration, a more obvious instance of the mind's multiplying what is one is the statement, "John is John." Here the subject and the predicate, although multiple in the mind, are altogether the same in reality, not having, as do animality and rationality, a foundation for their multiplicity in things. (This example perhaps most clearly shows the existential status of relations of the reason.) From this it is plain that the multitude presupposed to the relations which logic considers—howevermuch that multitude may have a ground and an origin in reality—is not, however, convertible with it. Consequently since the foundations or things ordered in the mind do not correspond to things which are outside the mind, the relations in the mind have no exact counterpart in the real world. Hence it is plain that the relations which logic considers are a separate and distinct genus, and they are not to be construed as properties of things as they occur outside the mind.

Having presented this brief outline of what I understand the Aristotelian-Scholastic position to be, let me now turn to a consideration of the modern view.

III. THE CONTEMPORARY VIEW OF THE SUBJECT OF LOGIC

For the most part modern logicians do not, to my knowledge, address themselves determinately to the question which asks what the subject of logic is. However, a few of them do have something to say, and their writings can serve as a representation of what seems to be a common point of view; for, despite the lack of a large amount of explicit discussion, it can be shown that almost without exception modern logicians implicitly commit themselves to the views which the few explicitly describe.

In one of their works Professors Cohen and Nagel maintain that the subject of logic is "types of order" in general.⁴ This is indicated first by the heading of Section I in Chapter VI, and second by some explicit statements at the end of this same section. There, after first having credited the mathematicians DeMorgan and Boole with the revival of logic, these authors go on to say apropos of Boole's *An Investigation of the Laws of Thought* that

. . . It showed, with undeniable power and success, that the methods of mathematics are applicable not only to quantities, but to *any* ordered realm whatsoever, and in particular to the relations between propositions. The view that the study of logic was the study of types of order gradually forced itself upon men.⁵

No other statement the authors might make could put more lucidly what they consider the subject of logic to be, namely, types of order, and not just some particular order, but order in general. This, they hold,

⁴ Morris R. Cohen and Ernest Nagel, *An Introduction to Logic* (New York: Harcourt, Brace & World, Inc.).

⁵ p. 112.

is what the logician investigates. And from this it follows that since every order implies a relation of one (or more) thing to another, logic must consider as many kinds of relation as there are kinds of order. Moreover it seems to me that this is a statement about the subject of logic that most contemporary logicians would find acceptable. But in order to amplify the grounds upon which we assign this notion about the subject matter of logic to contemporary logicians in general, let me quote another passage, this time from Susanne Langer's *Introduction to Symbolic Logic*.⁶ In chapter I, entitled "The Study of Form," Professor Langer discusses at considerable length what she means by "form" in order to make the point that it is a primary business of science in general and logic in particular to concern itself with forms. And, while engaging in a discussion of "The Field of Logic," she says:

But if we would hold aloof awhile from any special science and really gain insight into the great storehouse of forms which may be interpretable physically, or psychically, or for any realm of experience whatever, we must consider abstract patterns as such—the orders in which any things whatever may be arranged, (emphasis mine), the modes under which anything whatever may present itself to our understanding. . . .⁷

Clearly this author has the same view as do Professors Cohen and Nagel. According to her the subject of logic is order in general, and therefore because every order is a relation, it follows that logic can be described as the general science of relations, the latter term being taken in all its community. Furthermore it is necessary to add that first glances make it appear that modern logicians consider symbolic logic to bear upon that which is common to relations both in the real world and those which exist only in the mind. But before anyone accepts this conclusion, I would like to show that it is not a complete view of their position.

When Cohen and Nagel undertake to discuss the basis of logical principles, they declare that logic studies the common attributes of being, and therefore a study of order in general must be construed to entail a study of some of the attributes of being in general. I quote:

We turn now to the first formulation of the three so-called laws of thought. This formulation is an obvious counterpart of the propositional formulation. And it expresses, perhaps even more clearly, that their subject matter is certain *general or generic traits of all things whatever*. And the same may be said of *all* the principles of logic. From this point of view, logic may be regarded as the study of the most general, the most pervasive characters of both whatever is and whatever may be. . . .⁸

Again these authors say:

. . . As principles of being, logical principles are universally applicable. As principles of inference, they must be accepted by all, on pain of stultifying all thought. . . .⁹

⁶ Dover Publications, Inc.

⁷ p. 39.

⁸ *Op. cit.*, pp. 185-6.

⁹ *Ibid.*

One must conclude that for these authors logic is either a sort of metaphysics or a metaphysical consideration, precisely because they regard the principles of logical inference to be also principles of being in general. In other words, principles of inference would appear to be, in some way at least, copies of principles of being, which would imply that between what exists in the mind and what exists in reality there is a one to one correspondence. Of course a position like this appears incredible to an Aristotelian. On the other hand, in order to avoid interpreting these authors unjustly it would seem proper to construe them as saying only that logic bears on the real common attributes of all things. At any rate this understanding suffices for our purposes here, and it clearly makes logic a science of real things as opposed to beings of the reason, for it cuts off from the province of modern logic those relations which exist solely in the intellect, for the latter are not "generic traits of all things whatsoever."

But perhaps an objection has arisen in the minds of some listeners, an objection the impact of which would be: "what has been described may be the view of some, but it cannot be construed as the position of contemporary logicians generally, for they do not as a group maintain that logic is a kind of metaphysics, or even that logic treats of the 'general or generic traits of all things whatsoever.'"

Now this objection must be given attention; but because so many logicians do not address themselves determinately to the present issue in the way in which Professors Cohen, Nagel, and Langer do, it will be necessary in order to establish the community of the view, to consider in more detail some of the particular doctrines which are commonly held, doctrines which do indeed imply the position described above. As the means for accomplishing this I have chosen to refer to Susanne Langer's work already mentioned. Hers is a very clearly presented position and therefore easily considered; but what is more important, as far as I can see it is also truly representative of a common point of view.

As a first step indicating the doctrines which implicitly support Cohen and Nagel, we may note that the kinds of relations which other authors consider logic to treat are real relations. Professor Langer, for example, uses, as instances of the kind of relations logic concerns itself with, such things as "to the north of," "likes," "is a brother of," and others similar to these. I. M. Copi employs toward the same end, "John loves Mary," "Plato was a student of Socrates," "Detroit is between New York and Chicago," and others that are similar.¹⁰ But plainly all of these are real relations. They are real because they are founded on real attributes of real things, for example, the act of teaching, loving, etc. Activities of any kind, whether they modify a material object or just dispose the one acting in reference to the object (as do seeing or wanting), are certainly real phenomena. They exist as modifications of real entities as the latter occur outside the mind. But if symbolic logic considers real

¹⁰ *Op. cit.*

relations, then it is a science of real being and must be distinguished from the logic that bears on beings of the reason.

An interesting supplement to the above consideration is the fact that Professor Langer distinguishes "predicates" from "relations." As examples of the former she gives "white," and "two-storyed (house)." These, she says, are to be treated as if they were relations. A difficulty arises, of course, because terms such as "white" are monadic, whereas it seems that relations should be at a minimum dyadic. Now Professor Langer attempts to overcome this difficulty, by declaring herself as follows:

... I cannot see that our judgment one way or the other in this matter makes any difference. Let us agree that "relation" is one thing, and "predicate," "quality," or whatever we choose to call it, is another: all that I wish to call attention to is that predicates figure in logical systems exactly *like* relations of a single term—they have all properties that a monadic relation would have.¹¹

This resolution of the problem makes one thing very clear: predicate, as this author understands it, signifies a real attribute and not a relation of the reason. "Predicates" are to be regarded as of little interest to the modern logician. Compared to "teacher," "likes," or any other attribute in reality which is a relation, Professor Langer's "predicates" certainly do lack the multiplicity that "relations" demand, for the former do not entail the reference of one thing to another. Indeed, according to Professor Langer, "The only important use of predicates in a logical structure is *classification*."¹² But once again it must be stressed that "predicates" or "monadic relations" are distinguished from (dyadic or higher degree) relations as *one real characteristic from another*, a position that confirms our contention that modern logic treats of real relations. On the other hand, in Aristotelian logic, "predicate" is a word signifying something that is said in relation to a subject, and therefore there is no predicate which does not imply a relation of the reason, a second intention. This is very much in contrast to Professor Langer's view, according to which "predicate" does not signify a relation at all but a real characteristic that is neither a relation nor the foundation of one.

To pursue the notion of subject and predicate a bit further, in the logic of Aristotle and the Schools subject and predicate are distinguished as parts of a proposition insofar as the latter is an act or concept of the mind. Whenever the mind enunciates a proposition one thing is said or denied of another, as when I say *man is an animal* or *swans are not black*. Hence a proposition can be divided into two distinct parts; that which is said of another, the predicate, and that of which another is said, the subject. But the relationships implied between them exist only within the mind; for when one says that "animal" is a predicate and "man" is a subject he refers one to the other insofar as both exist in the mind and not insofar as they occur in individual things in reality. The

¹¹ *Op. cit.*, p. 158.

¹² *Ibid.*, p. 159.

same thing holds if one employs "animal" or "man" as a middle term in a syllogism. These are middles in the mind only. Furthermore, any real attribute whatever, whether a relation or something that founds a relation, can be a concept to which the additional relation of predicate is attached. For example, if I say "some man is white" or "man is an animal" my mind attaches the relation of predicate to "white" and "animal." And if I say that "Socrates was the teacher of Plato," "teacher of Plato" is the real relation founded on the real activity of teaching. And since "teacher of Plato" is a concept in the mind which is referred to the concept of Socrates, the real relation, "teacher of Plato," considered as a concept is the foundation to which the mind attributes the other relation of predicate. Indeed the distinction between the two categories of relation cannot be denied.

Another ground for maintaining that in considering general forms modern logic is attempting to treat something real is exposed in the doctrine of abstraction as it is presented by Professor Langer:

Logic—so this book announces in its very beginning—is the study of forms; and forms are derived from common experience, reality, life, or whatever we choose to call it, by *abstraction*. The science of logic is a steady progression from the concrete to the abstract, from contents with certain forms to those forms without their contents, from instances to kinds, from examples to concept.¹³

Abstraction is indeed a process of going from the individual to the universal, or from the species to the genus, until one reaches that which is most common, completely general, and hence most abstract:

By formalizing the elements of a system we obtain general concrete propositions: *by formalizing the constituent relations (or predicates, or operations), we obtain abstract propositions. An abstract statement is a completely generalized propositional form.*¹⁴

But it is plain that however general these forms may be, however empty of particular content, they are still real attributes, if they are arrived at by a process of ever broader abstraction of the common from the particular. Indeed, insofar as these forms are concerned with relations, they represent that which is common to all the relations which fall under their considerations. Only in this sense are they pure forms, and in this sense they would also be "general or generic traits of all things whatever."

At this point perhaps we should anticipate an objection. For someone may ask, what about the logic of classes (universals) and the logic of the syllogism? These are treated by modern logic, hence that logic must in some manner overlap the older one.

The principle involved in the reply to this can be seen most easily in the logic of classes. In modern symbolic logic classes are treated in "extension" as opposed to "intension," and this is the modern logician's expression of the difference between the old and the new logic. Indeed

¹³ *Ibid.*, p. 240.

¹⁴ *Ibid.*

Professor Langer defines class as "the field of applicability of a concept," hence she defines it as an aggregate (or its privation, the null class), at least when the elements of the class are individuals. Therefore to consider classes in extension is to consider them as aggregates, not as universals—the common attribute by which they are one—and to consider them in this manner is to consider them either as realities (individuals) or as imitations of realities (when elements are classes themselves). Hence when one class is thought to contain another the two are conceived as containing and contained aggregates or collections, for no matter how "empty" the notion of multitude may be as far as other characteristics of real things are concerned, the attributes of "one," "multitude," "null," etc., are first of all characteristics of reality; and therefore the relationships involved are real relations or at least imitations of them. This, of course, is necessary for modern logic. It must turn relations of the reason (the logical universal) into real relations precisely because it seeks to calculate, to construct, to combine parts into wholes. Howevermuch such contemporary logic does, at times, treat second intentions, its goal is to consider relations that are real.

In the calculus of propositions a similar combining occurs. Propositions are regarded as elements to be combined into new wholes analogous to the new classes constructed in the calculus of classes. Plainly the aim of modern logic is to construct, to build up from elements, and thereby "deduce" all that possibly can be generated from the primitive notions. Deduction, it should be emphasized, is identified with this constructive process.

In contrast to this stands Aristotelian logic, which is founded upon the class considered in "intension," and which considers demonstrative argumentation to be the goal of all logic. Now in a demonstrative argument the aim of logic is to help the mind see the connection between one universal (property) and another (difference). To illustrate: given that reason is an intellectual faculty which moves from the more to the less known, why does it necessarily follow that it must communicate by a power of speech? In short, why are rational beings always endowed with a power of speech? Thus, the necessity of the connections between "able to reason" and "able to speak," insofar as it can be manifested by definition and therefore by the class considered in intension, is the goal at which Aristotelian logic aims its efforts. Furthermore, to know the demonstrated as a constructed whole is not the goal of Aristotelian logic. On the contrary, by an analysis of the construction of the whole one is able to move from a knowledge of one of its parts to a knowledge of the other. Aristotelian and symbolic logic are, it seems, poles apart.

There is still another way of seeing the distinction between symbolic and Aristotelian logic that is worthy of note. The second of these is regarded as a tool, whereas the first—modern logic—must be viewed as *a system to be studied for itself*, and as such it is a generalized representation of reality. This is borne out by the current contention that logic is studied as an abstract system that is independent of its "interpretations" or the instances to which it might be applied. The

aim of this logic is to be as abstract and therefore as general a representation of reality as possible. As support for this point it is interesting to note the words of J. O. Urmson:

... The shortest account of logical atomism that can be given is that the world has the structure of Russell's mathematical logic.
... The structure of the world would thus resemble the structure of *Principia Mathematica*. That is the simple argument of the plot.¹⁵

According to Urmson, in order to understand Russell's metaphysics one must first understand the latter's logic, for "That is the simple argument of the plot." But clearly such a logic cannot be a tool nor can it bear on relations of the reason. On the contrary, if Urmson's estimate of Russell is correct, for Russell, and it seems others too, symbolic logic is the science, par excellence; it is a wisdom containing the key to an understanding of being in general.

Thus, from all these considerations we can be led to but one conclusion: Aristotelian logic and symbolic logic are two distinct disciplines. Hence the word "logic" is analogous when applied to them. Aristotelian logic treats of relations that exist only in the mind, whereas modern logic is a generalized consideration of real relations.

But one more question needs to be asked: why can we not say that modern logic is a science of relations in general, insofar as "in general" would include that which is common to real relations and relations of the reason?

To this it must be replied that where things are distinct in their most common genera they are only analogously, not univocally one. Hence no science which would treat of these two distinct genera commonly can do either adequately. If one wished, for example, to define the analogous term "father" insofar as there is something common to parent and priest, he would have to leave aside that which adequately characterized each. Similarly, a "logic" which attempted to perform in this manner would necessarily be inadequate as far as directing the reasoning processes is concerned.

To consider the same point in another way, an analogical community is quite distinct from a generic one. Analogous terms are used according to a priority of more and less known, and the primary analogue is a principle of manifestation with regard to the secondary analogue, and when such a relation obtains one is not a genus with regard to the other and cannot contain it as a part. One analogue must remove from its definition what the other contains. This would mean that either Aristotelian or modern logic would be the primary analogue and the other a secondary one understood in relation to the first. Hence the two are so distinct that one cannot be considered to include the other as a part.

Thus, in summary our argument can be formally put as follows: No disciplines which treat generically different subject matters are related

¹⁵ *Philosophical Analysis* (London: Oxford University Press, 1956), pp. 6-7.

as subjective part to logical whole; Aristotelian and symbolic logic treat generically different subject matters; therefore Aristotelian and symbolic logic are not related as subjective part to logical whole. It seems to me that the considerations in this paper establish that negative conclusion.

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II. *Man, The Rational Animal—The Scope of Logic*

(The Use of Art in the Teaching of Logic)

The title of this paper is: *Man, the Rational Animal—the Scope of Logic*. In trying to make this title more unified I considered as a title: *The Scope of Logic, Man, the Rational Animal's Tool*. The difficulty here is that there are really two ideas involved. First, the scope of logic, and secondly, the definition of man, the rational animal. My main concern in this paper is with the scope of logic and the problems it faces today, for reasons which I shall present in a moment. But I believe that it is impossible to solve these problems or to define the scope of logic without examining the nature of man as a rational animal. Logic is defined, after all, as the art which directs the act of reasoning. And so what is involved in determining the scope of logic is determining the scope of reason.

Now the question arises why the scope of logic needs to be investigated at all. If there is a suspicion lurking in your minds that it needn't be, then you may as well go home, back to bed, or to the movies, whatever you usually do on free days. I'm pretty sure that logic needs to be re-examined quite apart from any reasons that may be advanced for it, but here are the reasons why I think, at any rate, that an examination of the scope of logic is necessary. There is first of all the general reason that Thomistic philosophy and theology—or Thomism—in general are being critically re-appraised. Logic, as a part of this philosophy, must also undergo this scrutiny. As a matter of fact, there are a lot of people who say that the only thing wrong with Thomism is its method, and for them the reform of Thomism is easy. Drop the scholastic method.

There are also particular reasons for examining the scope of logic. Many problems have arisen in the field of logic which demand it, and in fields outside of logic there are many problems having to do with logic. (Incidentally, for those of you who keep logical notes, this part of the paper is called "the problematic," and its purpose is to raise questions which can be solved, I hope, by applying the solution represented by the thesis of this paper—whatever that is.) For instance, Catholic missionaries have raised the question whether the faith can be preached to non-Western people in terms of Western categories of thought. At home parish priests and preachers are telling us that they can't reach modern minds with medieval methods. Some theologians believe that a new method is required to solve the problems of contemporary unbelief, e.g.,