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BASIC OPPOSITIONS IN LOGICAL THEORY

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PREFACE

In the beginning of my research for this dissertation, I was interested only in the relation between the Pseudo-Thomistic Summary of the Entire Aristotelian Logic and the authentic works of Aquinas. However, as the work progressed, I discovered that the oppositions between these two logics involved factors which it seemed to me could be illuminated only by extending the study to include the logic of William Ockham. Moreover, the oppositions among the logics I was investigating began to appear fundamental for the entire theory of logic. Consequently, the work I now present is not primarily a historical study, but a philosophic attempt to state and illustrate these basic oppositions. However, the finished work bears marks of its origin and development; it might well be sub-titled: "The Pseudo-Thomistic Summary of the Entire Aristotelian Logic and Certain Oppositions of Logical Theory in Which It Is Involved."

I have tried not to produce a narrow historical study; in making this effort, I realize I have attempted a task which would be difficult for one who was both a mature philosopher and a very competent scholar. Since I am neither of these, my work undoubtedly is susceptible to grave criticisms at many points. Nevertheless, if you will guard against my deficiencies, you may find something interesting and suggestive—perhaps, even, something true—in the following pages.

At the completion of my work, I give thanks to God, as is "truly meet and just;" I offer to His honor whatever there may be in my work, for without Him—nothing.

I wish to express my gratitude to all who have aided me. First, to the librarians, particularly those in Swift Hall Library at the University

of Chicago, for services often beyond the strict requirements of duty. I also thank the University of Chicago and the Louis Asher Fund for fellowships which made possible the preliminary work; I am especially grateful to the Charles E. Merrill Foundation for a fellowship which made it possible for me to write the dissertation. My colleagues and the administration of Georgetown University have done everything possible to assist me in completing the final revision; I thank them. In the early stages of my research, Professor Vernon Bourke of St. Louis University, Professor Lincoln Reis of Long Island University, and Father Armand Maurer of the Pontifical Institute of Medieval Studies at Toronto kindly responded to inquiries concerning bibliographical problems.

To my early teachers, I am permanently grateful. Professor Marshall Bourman first introduced me to philosophy at John Carroll University; Fathers Edmund Marr, O. P. and Gerard Joubert, O. P. taught me to understand Aquinas at the Dominican College of St. Thomas Aquinas; Professors Herbert Lamm and Werner Wick introduced me to the larger world of philosophy at the University of Chicago. None of these men was directly involved in the production of this dissertation; however, they placed the foundations on which this work—and whatever I may do—must be built.

Professors Charner Perry and Manley Thompson read the dissertation and gave me many valuable suggestions. Professor Richard P. McKeon guided the entire work. I am most grateful to these three scholars, but particularly to Professor McKeon for his constant advice and generous assistance. I must point out, however, that he often left me free to take his advice or not, and that I probably have not followed it often enough. This work should not be taken as the presentation of a position with which my mentor would agree, nor as the offering of an analysis which he would defend.

Finally, I thank my many friends and relatives who have encouraged and supported my work. I am grateful to my parents, who have always had a liberal confidence in the work of intellect, even when its results are not intelligible to them. To my darling Jeannette, my wife, I give thanks with my love; she has given me not only the loyalty and affectionate help of a good wife, but also the devoted labor of a fine secretary.

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I INTRODUCTION

The Field and the Problem

The field in which my investigation falls is logical theory. By "logical theory," I do not mean a theory in logic, but a theory about it.

I assume that it is easy to distinguish what is logic from what is not logic—providing one does not take borderline cases. Not only does a logical work usually have "logic" somewhere in its title, preface, or introduction, but it deals with terms, propositions, and arguments as its proximate subject matter.[1] The names of these elements of proximate subject matter may, of course, vary; such variations are not insignificant. Expressions such as "class," "function," and "calculus" reveal an orientation different from that suggested by "concept," "judgment," and "reasoning." Under whatever names they may assume, however, the elements of the proximate subject matter of logic can be apprehended.

The elements of proximate subject matter may be treated in two ways which are distinguished only in some logics. The distinction, definition, and inter-relation of what falls in each class of element may be treated, together with the relations of each of the elements to the others. Such expressions as "clarity," "consistency," and "validity" signify the notions which become important in such treatments; the treatments themselves may be called "formal." On the other hand, the elements may be considered in relation to some thing or things other than themselves. Such expressions as "meaning," "truth," and "explanation" become important in such

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[1] John Dewey employs the expression "proximate subject matter" and distinguishes proximate from ultimate subject matter in Logic, the Theory of Inquiry (New York; Henry Holt and Co., 1938), p. 1. I shall neither present Dewey's position nor criticize it, but I acknowledge a debt to it.

treatments.[1]

In addition to treatments of either of these kinds, there may be treatments of a quite different sort—again, some logics would not distinguish them. The following questions suggest the kind of treatment I have in mind. What, ultimately, are the elements of the proximate subject matter? How, in a given logic, does a notion of the nature of the elements determine the formal and non-formal treatments? How are such treatments related to each other? What is logic in itself, in its function, and how does it achieve its objectives? How is logic affected by notions of what there is, what knowledge is, and what language is? How is logic related to the remainder of philosophy—supposing one grants there is a remainder? Attempts to answer these questions fall within the province of what I call "logical theory;" it might also be called "philosophy of logic" or "metaphysics of logic."

Even a nodding acquaintance with the history of logic reveals that there may be considerable agreement in formal treatments; logic may even seem stable through revolutionary transformations of philosophy. Both formal and non-formal treatments of proximate subject matter reveal sufficient unity and constancy to justify calling many different works "logic," even though it would be difficult to say exactly in what the unity and constancy consist. Nevertheless, there is radical divergence with respect to logical theory, even among logicians in close agreement on formal issues who can conduct successful debate to settle non-formal issues within the proximate subject matter.

Logical theory usually remains undiscussed, implicit, and merely incipient; it is certain to be less clear and more difficult than problems in the proximate subject matter, and its importance to logic may seem as slight as the importance of metaphysics to being. After all, things keep right on being, even though metaphysicians seem unable to satisfy themselves about them. However, while many metaphysicians would deny that

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[1] Rudolf Carnap distinguishes between logical syntax and semantics in Introduction to Semantics (Cambridge; Harvard University Press, 1942), pp. 8-11. This distinction is an example of the kind of distinction I wish to make between formal and non-formal treatments, although I do not wish to limit my distinction to this instance.

there are presuppositions and consequences both of their own discipline and of its subject matter, since they think that metaphysics concerns everything, most logicians would maintain that there are presuppositions and consequences of their discipline and its subject matter—that is, most logicians think they are working in a limited domain. If logic is a limited domain, however, the importance of developing a theory of logic—despite the difficulty involved—becomes apparent, for a theory of logic should help to determine what is appropriate in logic, in view of what a logician should work, and how he may avoid extending his logical principles and methods beyond the limits of his proper domain. Even if none of these questions can be settled, even supposing that logical theory is finally a matter of choice, an explicit treatment of logical theory may help to reduce oversimplifications and inconsistencies.

The particular problem of logical theory in which I am interested in this dissertation is one aspect, which I consider basic, of the question concerning the nature of logic.

What logic is, is the basic question in logical theory. We can hardly determine what the characteristics and relations of logic are, much less explain why it deals with certain elements and how it determines concerning them, if we do not know what it is itself. It may be argued, of course, that the answer to the former question depends on answers to the latter ones; indeed, it might even be argued that the nature of logic is merely the sum of its characteristics and relations. According to some logical theories, there is truth in these arguments; even so, some notion of what kind of elements, characteristics, and relations, what kind of dealing with elements, and what kind of determination—in short, some notion of what is logical—must govern the selection of characteristics, relations, treatments of subject matter, and determinations concerning it which are to be classed as "logical."

The first course for which I registered in philosophy was logic. Enthusiastic about the delights of the syllogism, I began to wonder just what it was that I was so much enjoying. Unfortunately, the book from which I was being instructed did not offer any clear statement as to what it itself was. The introduction was more concise than illuminating. With youthful exuberance and naiveté, I went to the library to consult some

other logics and—lo!—I discovered that there was at least one point on which no two of the books seemed to agree: what they were. What I had discovered, of course, is that it is one thing to ask what an amoeba, a contract, or an atomic bomb is, and quite another to ask what logic is. Subsequently, I learned that the latter problem was of a type with asking what science, morality, or art is, and that satisfactory answers to such questions are not easily gotten. To begin to answer them, one cannot simply accept a single instance of what claims to be scientific, moral, or artistic; rather, one must examine a host of instances which differ greatly from each other precisely in respects that are thought to be essential to maintaining the title, so that rival claimants may deny one another's rights even to be called "scientific," "moral," "artistic," or "logical."

Since this situation holds for logic, the attempt to determine what logic is, cannot succeed by the examination of a single logic or by the exposition of a single theory of logic. Different claimants to the title must be examined, permitted to state their cases, and adjudged. However, since the candidates are so numerous, how is one to select a few for the first examination—that is, which conflict is basic?

Definitions of logic begin, "Logic is a study of . . . ," followed by an indication of the elements of proximate subject matter. These indications differ, however, for they may emphasize formal or non-formal considerations; they may consider the elements to be elements of reality, of knowledge, of language, or of action; they may consider one of the elements primarily or exclusively. Of course, various logical theories deny some of the distinctions I am suggesting, but these distinctions always are important either positively or negatively.

However, if logic is a study, the ambiguities inherent in the seemingly innocent preposition "of" should be handled before other means of drawing distinctions within the subject matter are treated; for if logic is a study of something, what it is for it to be a study of whatever it studies, is more basic than any differences in what it happens to study, although the former may be inseparable from the latter. If logic is a study of something, it may be so either in the same way that other studies are of their subject matters or in a way uniquely its own. On the one

hand, then, logic may be a study of a subject matter in a way that no science or art is a study of subject matter. On the other hand, in the former case, logic may investigate something which is to be produced or constructed through that investigation or it may investigate something neither produced nor constructed by logical investigation but independent of it.

If all of these distinctions are accepted, it follows that there is at least a threefold division of logical theories on bases prior to the consideration of diversities by the determination of the precise subject matter. First, there can be a logic which is a speculative or theoretical study of the elements of logic's proximate subject matter; whatever the latter are, in this type of logic they will be considered to be fully determinate prior to logical investigation. Second, there can be a logic which is a practical or productive study of the elements of logic's proximate subject matter; again, whatever these are, in this type of logic they will be determined through logical art. Third, there can be a logic which is rather a study of the elements of logic's proximate subject matter than a training in a technique involving them, but which neither discovers these elements by its investigation nor constructs them through its art.

Supposing that there are three such types of logic, the oppositions among logics of these types would be basic ones, for oppositions about what is to be studied—although important—are less ultimate for determining what logic is than oppositions about what it is for logic to study whatever it studies. At any rate, so it seems to me; it is on this supposition that I shall investigate these oppositions in this dissertation.

It would have been possible to develop diverse logics illustrating the theoretical oppositions in which I am interested—although, probably, not possible for me to do it well. However, since the history of logic already has produced myriad varieties of logic, it seemed easier and more illuminating to study a selected group of examples.[1] I wanted instances which opposed each other in the basic way I have indicated. These logics

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[1] Etienne Gilson compares such a philosophical use of history to the experimentation practiced in the sciences in The Unity of Philosophical Experience (New York: Charles Scribner's Sons, 1952), pp. vii-viii.

preferably would be very similar with respect to other issues in logical theory, since such similarity would permit the basic oppositions to be developed easily with respect to some subordinate issues. I did not think it would be profitable to institute a comparison between logics which were not in contact with each other—for example, between some contemporary logics and some ancient or medieval ones. Hence, a choice was necessary; I have chosen to deal with examples drawn from medieval logic. For this choice, I had two reasons. First, it was in medieval logic that I first became interested in this problem of logical theory; consequently, I was more familiar with this material and this mode of logical procedure. Second, however, the genetic unity of medieval logics, in their dependence on Aristotle, and the relative self-consciousness of medieval logicians about the relation between a study or technique and its subject matter, seemed to me factors which might conduce to the success of my investigation.

Consequently, in the body of this dissertation, I shall examine examples of logic as instances of the three types I have distinguished. The purpose of the investigation is to determine what a logic of each type might be, and how it will be opposed to logics of the other types. As an instance of logic as a science, I have chosen the Pseudo-Thomistic treatise, Summary of the Entire Aristotelian Logic.[1] As an instance of logic as an art, I have chosen William Ockham's Summary of Logic.[2] Finally, as an instance of a logic as a study of the proximate subject matter, but which neither is a speculative knowledge or an art, I have chosen to investigate the logical theory of Aquinas. Unfortunately, Aquinas did not leave any logical treatise comparable to the others I shall consider; therefore, it will be necessary to refer to many of his works.

Limitations and Relevance

There are severe general limitations on my entire work; I now must

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[1] Summa totius logicae Aristotelis, Sancti Thomae Aquinatis, Opuscula omnia genuina quidem necnon spuria, ed. Petri Mandonnet, O. P., V (Parisiis; P. Lethielleux, 1927), pp. 1-162. "S. t. l." will designate this work in this edition in all subsequent citations.

[2] William Ockham, Summa logicae, ed. Philotheus Boehner, O. F. M., I (St. Bonaventure, N. Y.; Franciscan Institute, 1957), II et III-I (idem, 1954), and III-II (mimeograph kindly supplied by Franciscan Institute, n.d.)

indicate what these are.

First of all, I shall not attempt to treat the three positions in equal detail. My reason for this is a simple one: among the three positions there are three different oppositions. These oppositions can be made to appear clearly by pointing up the similarity between any two of the positions, and opposing the third to the common ground held by the first two. An adequate treatment of all three positions, then, would require an examination of all the materials from three quite distinct points of view. Now, the entire tradition which has assimilated Pseudo-Thomas' logic to the authentic position of Aquinas has provided us with a development of this point of view against the position of Ockham. On the other hand, recent studies on Ockham's logic by Father Philotheus Boehner, O. F. M. and Ernest A. Moody have developed, to some extent, the opposition between positions similar to that of Pseudo-Thomas and a version of Ockham's logic which is difficult to distinguish from Aquinas' position. Consequently, I shall concentrate my attention on the opposition between Aquinas' authentic logic and the common ground between Pseudo-Thomas and Ockham. Moreover, since previous study of Pseudo-Thomas has been relatively slight, while excellent studies have been made of Ockham's logical theory, I shall emphasize particularly the opposition between Pseudo-Thomas and Aquinas. Ockham's position I shall treat in less detail, and I shall make use of Father Boehner's articles and Professor Moody's study in treating it.

Second, the problem with which I am dealing is large and inherently difficult. Although I have limited the problem to a single aspect of the nature of logic, a treatment even of this aspect must consider, in a subordinate way, many other questions in logical theory. Thus, the relation between formal and non-formal treatments; the inter-relations among language, thought, things, and operations; the inter-relations among the elements of the proximate subject matter; and the characteristics and extrinsic relations of each logic--all these must be considered to a certain extent, for it is only by such considerations that the implications of a certain notion of logic for the presuppositions and consequences of that logic become evident. Moreover, logic itself is sufficiently difficult, and a theory of it must be intricate and highly abstract. Clearly, then,

even within the limits I have set and under the limitations I recognize, my investigation must be provisional, rather than definitive.

Third, the investigation I am attempting is hindered both by its own novelty and by the limited knowledge we have of the history of medieval logic. Concerning the first point, it is true that many works of logic give some attention to the problems of logical theory with which I am concerned. Generally, however, the concern with logical theory is by way of introduction; little attention has been given to oppositions in logical theory, except in logicians' attempts to eliminate other notions of logic in favor of their own. Consequently, I have had to develop the means for dealing with the problem of the nature of logic—as I understand the problem—as well as a treatment of the problem itself. Concerning the limited knowledge we have of the history of medieval logic, little needs be said. On each of the logics with which I shall deal, some works have been written; I shall refer to some of them. However, careful studies of the available texts, particularly with reference to my problem, are few.[1]

The fourth and most important limitation on my work is that I wish to make very limited claims for the historical validity of the interpretations I shall give of the medieval logicians. Neither can I claim the competence required of a scholar in the history of medieval philosophy nor am I chiefly interested in establishing a historically valid interpretation of the texts I shall examine. The objective of my investigation is to begin to establish a logical theory by dealing with the basic oppositions which are possible between different types of logic.[2] For this purpose, I shall use some medieval logical works. However, even if my interpretations of these materials would be judged misconstructions by compe-

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[1] Philotheus Boehner, O. F. M. contrasts the revival of interest in scholastic metaphysics with the present lack of interest in medieval logic in his Medieval Logic (Chicago; The University of Chicago Press, 1952), p. 96: "But scholastic logic, the tool the masters so ably handled in constructing their systems, is up to now utterly neglected." Father Boehner's interest in logic is not the same as mine; perhaps his statement, taken to my point, is exaggerated.

[2] Morton White discusses such a use of historical materials to construct ideal types of historical-intellectual movements and he utilizes a similar technique in Toward Reunion in Philosophy (Cambridge; Harvard University Press, 1956), p. x.

tent scholars, my conclusions concerning the possible oppositions in logical theory need not be insignificant, for they apply to the various logics as I interpret them, and these logics are at least possible instances of what logic can be. Of course, with restrictions I shall note, I shall try to give tenable interpretations of the materials; however, given the restrictions I have stated, these interpretations must be taken as hypothetical, and I do not claim more for them.

I believe that my investigation of oppositions in logical theory may be relevant to three problems of current interest.

First, the problem of the nature of logic and its relation to ontology is one of current interest. Tremendous strides have been made in the past hundred years in the technical development of logic—or, better, of certain types of logic. Nevertheless, there remains considerable confusion concerning the nature of logic itself.[1] Dewey emphasized the existing uncertainty concerning the ultimate subject matter of logic; he also considered it a pressing problem precisely in view of the advance in the field of proximate subject matter.[2] Kattsoff has argued that the linguistic turn recently taken by philosophy under the influence of logic has not avoided metaphysical problems.[3] His analysis suggests the significance of the problem in logical theory concerning the relation of logic to ontology for the treatment of these disguised metaphysical problems.[4]

If I succeed in uncovering some of the basic oppositions in logical theory concerning the nature of logic itself, then, and if these oppositions also are exemplified by contemporary logics, my investigation may be

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[1] Manley Thompson makes this precise point in "Logic, Philosophy, and History," The Review of Metaphysics, VIII (September, 1954), p. 79. He also suggests that a historian of logic may assess the technical achievements of past logicians according to present standards, but that the history of logic also might be used to clarify disputes about logical subject matter and its relations to philosophy. It is the latter, of course, that I am attempting.

[2] Dewey, op. cit., pp. 1-2.

[3] Louis O. Kattsoff, Logic and the Nature of Reality (The Hague: Martinus Nijhoff, 1956), chap. i. The problems he has in mind are typified (p. 12) by the argument concerning synthetic a priori propositions.

[4] Ibid., p. 18 and chaps. i-iii, passim.

relevant to a broad range of current problems. Quine already has remarked that the main medieval points of view concerning universals have reappeared in twentieth-century surveys of the philosophy of mathematics under new names.[1] Although I wish neither to vouch for Quine's point nor to quarrel with it, I do believe that if such references are found useful, an investigation in logical theory using medieval materials is relevant. The investigation will be even more clearly relevant, if it appears that the oppositions in question do not merely concern universals, but are most basic oppositions whose expression, in only one aspect, is in disagreements concerning that question.[2]

A second problem of current interest to which my investigation may be relevant is the question concerning the relation between traditional logic and modern logic. Rather than "problem," I should say "problems" here, for there are many of them, ranging from indiscriminate rejections of traditional logic as a whole as idealistic, psychologistic, or metaphysical, to recent attempts either to minimize the distinction between traditional logic and modern logic or to deny the name of "logic" to much of contemporary logic.[3] Now I do not intend to engage in this argument, but my investigation may have some relevance for it, if it appears that "traditional logic" refers to a collection of works involving basically opposed logical theories. If, furthermore, modern logics exemplify similar oppositions, then the situation may be considerably more complex than it

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[1] Willard V. Quine, "On What There Is," Review of Metaphysics, II (September, 1948), p. 33.

[2] Warner A. Wick has treated the question of the presupposition by logic of metaphysics and has distinguished two types of position in Metaphysics and the New Logic (Chicago; The University of Chicago Press, 1942). His investigation shows at least that the oppositions are fundamental and that differences in logical theories have implications for metaphysics. Etienne Gilson described the problem of universals as a "battlefield where the adversaries join battle only when provided with all their armament," in History of Christian Philosophy in the Middle Ages (New York; Random House, 1942), p. 98.

[3] For example, Joseph T. Clark, S. J. argues for the minimum distinction in Conventional Logic and Modern Logic (Woodstock, Maryland; Woodstock College Press, 1952), p. 60; Henry B. Veatch argues for the maximum distinction, which would exile mathematical logic completely, in Intentional Logic (New Haven; Yale University Press, 1952), p. 3.

would seem. It may even be the case that some of the arguments which have been conducted are not properly concerned with differences between traditional and modern logics, but with differences between theoretical positions. If this is so, then it seems necessary both to distinguish the various theoretical positions--which I am attempting to do--and to seek characteristics suitable to divide traditional logics from modern ones.

The third problem to which my investigation may be relevant is being debated among Thomists; the problem concerns the starting-point of metaphysics.[1] The problem actually has a number of aspects. One of these is a problem concerning metaphysical method.[2] Another, is a disagreement concerning knowledge of existence.[3] With regard to these problems, again, I do not wish to enter the controversies directly. However, my investigation may be relevant in two ways. First, a clarification of Aquinas' logical theory may influence the discussion, since logic has a special relationship to the principles of metaphysics according to Aquinas.[4] Second, a distinction between the logic of Pseudo-Thomas and that of Aquinas may help to remove many obstacles to the understanding of Aquinas. Pseudo-Thomas' treatise influenced Thomists even after its spuriousness was certain, for it was accepted as genuine by John of St. Thomas, and John of St. Thomas' logic is most influential in Thomist circles even to the present.[5] John of St. Thomas cites the Summary of the Entire Aristotelian

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[1] Melvin A. Glutz, C. P., "Being and Metaphysics," The Modern Schoolman, XXXV (May, 1958), p. 271. Father Glutz supplies a useful bibliography for the problem (p. 272).

[2] Robert J. Henle, S. J. presents one position regarding this question in Method in Metaphysics; The Aquinas Lecture, 1950 (Milwaukee; Marquette University Press, 1951); Bernard J. F. Lonergan, S. J. defends and proceeds according to a different method in Insight, a Study of Human Understanding (New York; The Philosophical Library, 1957), chaps. xiv-xvii.

[3] Etienne Gilson, Being and Some Philosophers (2d ed.; Toronto; Pontifical Institute of Mediaeval Studies, 1952), appendix.

[4] Infra, p.

[5] Roland Houde quotes contemporary Thomists to show that John of St. Thomas' influence is still great and is recognized as vicious only by some in his Review of Outlines of Formal Logic, by John of St. Thomas, trans. F. C. Wade, S. J., Speculum, XXXI (July, 1956), pp. 520-522.

Logic no less than seventy-five times in his Philosophical Course alone.[1] Moreover, the influence of this work on John is even greater than the number of citations would indicate. In meeting a difficulty raised by a certain passage in the work,[2] John realises he is in difficulties; perhaps suspicions concerning the authenticity of the work had already been raised. John says:

> We take this position in order to save the express place in St. Thomas where he clearly says that a relation is not distinct from its foundation. Nor ought we to deny this work, from which we so often seek authority, to be Blessed Thomas',[3]

Since contemporary Thomist logical theories are influenced by John of St. Thomas and since he was influenced by Pseudo-Thomas, a clear distinction between Aquinas' and Pseudo-Thomas' logical theories, showing that the spuriousness of the Summary of the Entire Aristotelian Logic cannot be ignored, should aid the Thomists indirectly; I believe that the attempt to combine Aquinas' metaphysics with Pseudo-Thomas' logic has caused problems which otherwise need not have arisen.

Literary-History of the Summary of the Entire Aristotelian Logic

Since there is no single source for the literary-historical material concerning the Summary of the Entire Aristotelian Logic, I shall present the essential material here.

The earliest catalogues of the works of Aquinas contain no entry which could be identified with the Pseudo-Thomistic logic. However, the catalogue of Ptolomey de Luca contains an entry, Introduction to Logic, which Mandonnet believed might be this work. This entry, however, lacks an incipit; consequently, definite identification from the catalogue is not possible.[4]

Kruitwagen, in discussing the earliest edition (1485) of the opuscula of Aquinas, points out that a work of this title was known to exist in

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[1] Ioannis a Sancto Thoma, O. P., Cursus Philosophicus Thomisticus, ed. Beato Reiser, O. S. B. (Taurini: Marietti, 1930-1937), III, p. 470.

[2] S. t. l., tr. V, chap. ii.

[3] Ioannis a Sancto Thoma, "Ars Logica," op. cit., I.

[4] Pierre Mandonnet, O. P., Des écrits authentiques de S. Thomas d'Aquin (2d ed.; Fribourg: Imprimerie de l'Oeuvre de S.-Paul, 1910), p. 149.

the last half of the fifteenth century. The text itself was not available to cataloguers of that period. Therefore, the Summary of the Entire Aristotelian Logic was not contained in the edition investigated by Kruitwagen. About 1495, while further editing of Aquinas' works was progressing, a manuscript was discovered and the work was edited.[1] This edition apparently was the first and the source for later editions of the work.[2]

The Summary of the Entire Aristotelian Logic was included in the first edition of Aquinas' complete works (Piana; 1570-1571) and in many subsequent editions. The most recent edition of the work is in the Opuscula omnia edited by Mandonnet, who included it with other spurious works.[3] Mandonnet's edition was reprinted from old plates, and many typographical errors were left uncorrected.[4]

Grabmann mentions the locations of some manuscripts of the work.[5] From a literary-historical point of view, a critical edition would be of great value. Since my interest is not historical, I have not examined any of the manuscripts.

There is no doubt that the Summary of the Entire Aristotelian Logic is not Aquinas' work. Prantl considered the work post-Scotistic, claiming to discern definite signs of a reaction to Scotus in it.[6] Mandonnet excludes it from the authentic writings of Aquinas on the basis of the catalogues.[7] Grabmann cites some results of study and criticism of the con-

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[1] Sancti Thomae Aquinatis, Summa totius logicae Aristotelis, ed. Hieronymi Monopolitano, O. P. (Venetiis; typis Simonis Beviloqua, 1496). I have never seen a copy of this edition.

[2] Bonaventura Kruitwagen, O. P. M., S. Thomae de Aquino Summa Opusculorum (Kain, Belgique; Le Saulchoir, 1924), pp. 48-49.

[3] Summa totius logicae Aristotelis, S. Thomae Aquinatis, Opuscula Omnia . . . , ed. Mandonnet, V (Opuscula Spuria), pp. 1-162. This is the edition I am using; see: n. 1, p. 6, supra.

[4] Mandonnet, "Introductio," Opuscula omnia . . . , I, p. xliv.

[5] Martin Grabmann, O. P., "Die Werke des Hl. Thomas von Aquin," Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters, XXII, (heft 1/2, 1931), pp. 221-222.

[6] Carl Prantl, Geschichte der Logik im Abendlande (Leipzig; S. Hirzel, 1855-1870), III, p. 244.

[7] Mandonnet, Des écrits . . . , p. 149.

tent to prove the same point.[1] All criteria for judging this question lead to the same conclusion: the work is not by Aquinas. I assume this conclusion as generally accepted; moreover, my own examination of the text and comparison with the authentic doctrine of Aquinas would have been sufficient to bring me to the same conclusion.

Grabmann discusses the problem of the date and authorship of the Summary of the Entire Aristotelian Logic but he leaves both questions undecided. He tells us that at one time it was thought that the work might have been by Harvey Natalis, but that this opinion has been given up.[2] Wild considered this possibility and rejected it with several arguments.[3]

Grabmann himself has advanced the hypothesis that the work might have been written by a Spanish Dominican, Petrus Alphonsus, who has been confused with Peter of Spain, since the logic attributed to Petrus Alphonsus is unknown today, and the date would be about right.[4] Mandonnet advanced the hypothesis that the work might have been written by Thomas of Sutton. This hypothesis would explain how the Summary of the Entire Aristotelian Logic entered the corpus of Aquinas; it also is consistent with the supposition that the entry in Ptolemy de Lucs's catalogue designates this work.[5] However, since no real evidence has been educed to support either of these hypotheses, both of them must be regarded as merely hypothetical.

Grabmann tells us that three points in the text have been taken as significant for fixing authorship of the Summary of the Entire Aristotelian Logic.[6] "Brunellus" is used as the name of an individual in the tree

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[1] Grabmann, op. cit., pp. 222-225.

[2] Ibid.

[3] Ignaz Wild, "Über die Echtheit einiger Opuscula des Hl. Thomas," Jahrbuch für Philosophie und Speculative Theologie, XXI (1907), pp. 69-71. The most impressive argument is based on Pseudo-Thomas' claim to have written on hypotheticals (tr. VIII, chap. xvii); Harvey has no such work.

[4] Martin Grabmann, O. P., Handschriftliche Forschungen und Funde zu den philosophischen Schriften des Petrus Hispanus (München: Bayerische Akademie der Wissenschaften, 1936), pp. 24-26.

[5] Mandonnet, "Introductio," Opuscula omnia . . . . , I, p. xliv.

[6] Grabmann, "Die Werke . . . ," pp. 223-224.

of Porphyry.[1] This name has been taken as an indication of Italian authorship.[2] However, it has been noticed that "Brunellus" often is used in examples as the name of an individual ass; consequently, the occurence here is not particularly significant.[3] "Praga" also occurs.[4] It has been suggested that this name is an indication of authorship at Prague and, since the university there was not founded until 1348, of a later date.[5] However, it has been pointed out that "Praga" could be a corruption of "Braga," which is the name of a city in Portugal.[6] It also has been suggested that the use of "il" in an example of vulgar Latin is significant.[7] Prantl took the article as an indication of Spanish authorship, for it appeared as "el" in the edition he used.[8] It seems doubtful whether any of these points can be significant without a study of manuscripts; even then, their significance will depend on inferences concerning the reasons for their occurence.

The author of the Summary of the Entire Aristotelian Logic says he wrote a work on hypothetical propositions and syllogisms.[9] This remark has been taken as proof of non-Thomistic authorship, since no such work has been ascribed to Aquinas.[10] The inference is sound enough but it does not help much to determine positive authorship, since such treatises, following Boethius, are common. Albert the Great also wrote on the subject.[11]

Little argument has been educed toward dating the treatise; all seem to agree that it falls between about 1275 and 1350. The supposition that it is identical with the work mentioned by Ptolomey de Luca would place it before 1300, but the argument based on "Praga" would place it after 1348.

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[1] S. t. l., tr. II, chap. iv. "Socrates" also appears there.

[2] Wild, loc. cit., p. 71.

[3] Grabmann, "Die Werke . . . ," (2d ed.; 1949), p. 242.

[4] S. t. l., tr. VI, chap. x. [5] Wild, loc. cit.

[6] Pierre Duhem, "Note sur une somme de logique attribuée a Saint Thomas d'Aquin," Revue de Philosophie, XIV (Janvier-Juin, 1909), pp. 457-458.

[7] S. t. l., tr. VII, chap. ii. The article appears as "il."

[8] Prantl, op. cit., III, p. 250, n. 300.

[9] S. t. l., tr. VIII, chap. xvii. [10] Wild, loc. cit.

[11] Boehner, Medieval Logic, pp. 3-4.

Previous Studies

Prantl devotes about seven pages to the Summary of the Entire Aristotelian Logic; he considers it insofar as it evidences various historical influences.[1] The work, according to Prantl, evidences positive influences of Albert and Aquinas and shows signs of a reaction against Scotus. He points out the influence of Porphyry and Boethius, which is obvious, and claims to detect effects of Arabian logic and the summulae tradition, which he calls "Byzantine logic."[2]

Wild's article contains some comparisons between passages of the Summary of the Entire Aristotelian Logic and corresponding passages in the commentaries of Aquinas on Aristotle.[3] He finds close similarities and judges that Pseudo-Thomas had studied Aquinas' commentaries carefully.

Duhem believes that the discussion of place in the Pseudo-Thomistic work[4] tends to make place absolute by relating it to the entire universe.[5] He indicates some comparisons with Aquinas on this matter but he does not reach definite conclusions. Duhem also examines one of the passages in which the doctrine of the latitude of forms appears[6] and concludes that Pseudo-Thomas uses a terminology, invented by Henry of Ghent for the position of Aquinas, to express a position at variance with that of Aquinas but in agreement with that of Giles of Rome. The difference between the two positions, according to Duhem, is that Aquinas and Henry hold that forms have latitude essentially, while Giles and Pseudo-Thomas ascribe the latitude of forms to their existential conditions.[7] While it would be fascinating to follow up the hints Duhem has given us, his interest was not in the philosophical orientation of the Summary of the Entire Aristo-

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[1] Prantl, op. cit., pp. 250-257.

[2] Prantl explains the origin and diffusion of "Byzantine logic" which he attributed primarily to Michael Psellus and only secondarily to William of Shyreswood and Peter of Spain (op. cit., II, pp. 261-264). His position on this question has been demolished. See: Joseph P. Mullally, The Summulae Logicales of Peter of Spain (Notre Dame, Indiana: The University of Notre Dame, 1945), pp. 9-10 for a complete bibliography on the issue.

[3] Wild, loc. cit., pp. 69-70.

[4] S. t. l., tr. II, chap. vi.

[5] Duhem, loc. cit., pp. 452-453.

[6] S. t. l., tr. II, chap. iv.

[7] Pierre Duhem, Etudes sur Leonard de Vinci, troisième série (Paris: Librairie Scientifique a Hermann et Fils, 1913), pp. 518-522.

telian Logic as a whole.

Mary Corrigan, R.S.C.J. examined the Aristotelian sources of the Summary of the Entire Aristotelian Logic.[1] Her dissertation includes a complete translation into English and an index, literary-historical notes, a statement of intention, a study of the source in Aristotle, and a summary and conclusions. Sister Corrigan shows that the treatises show various degrees of influence by Aristotle, from the treatise on the predicables which is unparalleled in Aristotle, to the treatise on the syllogism which corresponds rather closely to the Prior Analytics.[2]

Discussing the causes of the peculiarity of the Summary of the Entire Aristotelian Logic, Sister Corrigan ascribes it both to the historical situation of declining scholasticism, with its interest in distinctions and system-building as an end in itself, and to a radical difference from Aristotle in philosophic orientation. The latter difference is detailed in these points: Aristotle's logic is a series of treatises on various logical problems, but Pseudo-Thomas attempts a scientific system; the thought of the former gravitates toward real being, but that of the latter toward system itself; Aristotle is a realist, but Pseudo-Thomas is a formalist who judges everything on the basis of principles which he carefully lays down; and Aristotle stresses different modes of knowledge and emphasizes that non-scientific knowledge must precede demonstration, but Pseudo-Thomas stresses demonstration as though it were a unique means of knowledge and treats axioms as sources of knowledge which do not themselves qualify as knowledge.[3]

Lincoln Reis studied the treatises on the predicables and the predicaments in the Summary of the Entire Aristotelian Logic.[4] His study contains three parts; the first two paraphase these treatises and the third interprets the significance of the work by an analytic comparison with

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[1] Mary Corrigan, R.S.C.J., "Summa totius logicae Aristotelis: a Translation and a Study of the Aristotelian Sources" (unpublished Ph.D. dissertation, Department of Philosophy, Fordham University, 1934).

[2] Ibid., pp. 408-409. [3] Ibid., pp. 409-414.

[4] Lincoln Reis, "The Pseudo-Thomas on the Predicables and the Predicaments" (unpublished Ph.D. dissertation, Department of Philosophy, Columbia University, 1935).

Aristotle. Reis notes in his paraphrase that there are many divergences from Aristotle and he indicates some differences between Aquinas and Pseudo-Thomas. In his interpretation, Reis stresses the alteration which occurred by placing the predicables before the predicaments.[1] Logic in Pseudo-Thomas' conception becomes a speculative science of the forms of things in the mind or of the acts of the mind.[2] It begins not with incomplex terms, but with forms to be ordered.[3] Truth consists in the conformity of the form in the mind to the form in the thing.[4] Logic has a subject matter the same in kind with that of the special sciences—things of nature.[5] Understandably, the doctrine of induction is unnecessary, and the task of logic is reduced to demonstration.[6] The reason is that the establishment of a frame for predication is made prior to the significance of terms.[7]

Sister Corrigan and Dr. Reis have studied the text of the Summary of the Entire Aristotelian Logic very carefully; both of them have done much valuable work, to which I am indebted, by suggesting lines for analysis. In general, my entire investigation of the Pseudo-Thomistic logic has been influenced by their works, although I have proceeded in another direction.

Prelude to the Analysis

Pseudo-Thomas begins his Summary of the Entire Aristotelian Logic with the opening sentence of Aristotle's Metaphysics: "All men by nature desire to know." The objective Pseudo-Thomas sets himself is the fulfillment of this natural desire for scientific knowledge.[8] He argues that it is necessary to know demonstration scientifically to fulfill the natural desire, since demonstration is the cause of scientific knowledge.[9] This argument seems simple and innocent enough; surely, we suppose that we have

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[1] Ibid., p. 205. [2] Ibid. [3] Ibid., pp. 200-201.
[4] Ibid. [5] Ibid., p. 199. [6] Ibid., p. 203.
[7] Ibid., p. 201.

[8] S. t. l., Proemium: "Ad hoc ergo ut perveniamus ad ipsum scire ab omnibus naturaliter desideratum, iste debet esse ordo cum auxilio Dei tenebimus . . . [the outline of the work itself follows]."

[9] S. t. l., tr. IX, chap. i: "Cum enim scientia sit habitus conclusionis demonstratae acquisitus ex ipsius speculatione; est sciendum quid sit scientia, et quomodo acquiratur, necesse est scire quid sit demonstratio."

scientific knowledge when we think we know causes.[1] Considered more carefully, however, Pseudo-Thomas' argument is surprising, for he is arguing that a knowledge of the causes of scientific knowledge is necessary for the attainment of scientific knowledge; he is not merely saying that the causes of what is known scientifically must be known to achieve science. Pseudo-Thomas moves from the premise that science cannot occur without demonstration[2] to the conclusion that it cannot occur unless demonstration is known itself with a scientific knowledge.[3] The argument assumes that the being of science requires a scientific knowledge of science; that knowledge is to be provided by logic. Therefore, logic, for Pseudo-Thomas, is a science of scientific knowledge.[4]

What, then, is the plan of the work? The whole must terminate in a treatise on demonstration, the cause of scientific knowledge, but since a demonstration is a syllogism, the syllogism in itself must be studied first. However, the syllogism itself is composite; its proximate parts are propositions and its ultimate parts are terms. Therefore, propositions must be treated, and terms must be treated first. Incomplex terms belong to one of the categories; the categories are merely organizations of predicables—that is, universals—in predicamental orders—that is, Porphyrian trees. Therefore, the predicables must be considered first.[5] By this analysis, Pseudo-Thomas recurs to the ultimate principles of science—the predicables.

Reversing this order, Pseudo-Thomas presents the actual order of his work,[6] which is synthetic. We may tabulate it as follows:[7]

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[1] Aristotle Post. Anal. i, 71[b]7-12.

[2] S. t. l., Proemium: "Ad hoc autem quod tale desiderium naturale compleatur in homine, necessaria est demonstratio; non enim potest esse effectus, in quantum huiusmodi, sine causa."

[3] Supra, p. 18, nn. 8-9.

[4] Notice that Pseudo-Thomas never calls his work "an art." The other logicians we shall examine all call logic "an art," and that categorization was common throughout the period in which Pseudo-Thomas must have written.

[5] S. t. l., Proemium. [6] Ibid.,

[7] I have given the pagination of the Mandonnet edition here, although I cite it regularly by treatise and chapter, to indicate the relative size

Treatise I	On the Predicables	pp. 2-17
Treatises II-VI.	On the Predicaments.	pp. 18-74
Treatise II.	On Substance	pp. 18-30
Treatise III	On Quantity.	pp. 30-40
Treatise IV.	On Quality	pp. 41-47
Treatise V	On Relation.	pp. 48-52
Treatise VI.	On the Six Principles. . .	pp. 53-74
Treatise VII	On the Proposition	pp. 75-99
Treatise VIII.	On the Syllogism	pp. 100-139
Treatise IX.	On Demonstration	pp. 139-162

Treatise I corresponds to Porphyry's Isagoge; treatises II-V, to Aristotle's Categories; treatise VI, to Gilbert de la Poree's On the Six Principles; and treatises VII and VIII to Aristotle's On Interpretation and Prior Analytics. However, the final chapter of treatise VII and the final three chapters of treatise VIII mainly are on *hypothetical* propositions and syllogisms; these chapters correspond to Boethius' work On the Hypothetical Syllogism. Treatise IX corresponds to Aristotle's Posterior Analytics.[1] However, when I say "corresponds," I do not mean that all the same material is treated, nor that the treatises follow the same order in every case, nor—especially—that the same objectives are pursued. The Summary of the Entire Aristotelian Logic is an integral whole with its own design and plan, which we must discover. Pseudo-Thomas does recognize his sources, however, and his treatises do correspond to these sources inasmuch as he has drawn on them—or on works derived from them—for his materials.

I do not wish to *argue* that the Summary of the Entire Aristotelian Logic is not Aristotelian. So far as that point can be proved by comparative studies of Pseudo-Thomas' text and Aristotle's works, the previous studies I have cited have proved abundantly that the former diverges from the latter in important respects. So far as the question of what logic is in the genuine tradition of Aristotle is concerned, Pseudo-Thomas, along with the other authors I shall examine and many others, will tell us what that is. It is fortunate that Aristotle himself left the question of what he meant logic to be sufficiently open that the diversity in logical theo-

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of each part. The very size of the first six treatises in comparison with the last three suggests their basic importance for Pseudo-Thomas.

[1]Sister Corrigan, op.cit., pp. 349-407. Generally, I shall ignore the question of sources, since it is thoroughly treated there and by Reis, op. cit., passim.

ry in which I am interested could develop in his tradition. Nevertheless, it is clear that Aristotle's logic differs from Plato's science of knowledge and ignorance—dialectic. It is clear too, even from the outline of his work, that Pseudo-Thomas was influenced by Porphyry and Boethius. A historical inquiry into the sources of Pseudo-Thomas' notion of logic as a science of science is beyond the scope of my investigation; however, a few remarks about these earlier logics will suggest how a notion of logic as a science of science could develop, whatever the lines of historical influence actually were.

Plotinus, Porphyry's master, unified Platonism and Aristotelianism; in doing so, he transformed both of them. Here I wish to indicate the effect which Plotinus' accomplishment had on logic.

Plotinus considered dialectic to be the most valuable part of philosophy.[1] It is not an art but a science; it does not consider abstract rules and theorems, for things themselves are its subject matter.[2] Logic, on the contrary, is an art dealing with propositions and syllogisms, similar to the art of writing.[3] Dialectic is concerned with fallacies only indirectly insofar as it is concerned with truth itself.[4] Its terminus is a contemplative rest in unity.[5] Nevertheless, dialectic is called an "art of reasoning."[6] It treats the kinds of being scientifically and it establishes itself in the intelligible world.[7] Dialectic enables us to define, to differentiate, to place, and to relate things to existence.[8] Intelligence will furnish principles for the dialectic of a soul capable of grasping them.[9] Because it knows truth, dialectic knows the nature of propositions and operations of the soul, but it grasps these with insight and leaves the treatment of details to logic.[10]

Plotinus conceives philosophic development to be a process of becoming aware of what already was known implicitly.[11] The real concern of di-

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[1] Plotinus Enneads I, iii, 6. [2] Enn. I, iii, 5. [3] Enn. I, iii, 4. [4] Enn. I, iii, 5. Notice that Pseudo-Thomas (S. t. l., Proemium) makes note of his omission of treatises corresponding to Aristotle's On Sophistic Refutations and Topics, but does not explain the omission. [5] Enn. I, iii, 4. [6] Ibid. [7] Ibid. [8] Enn. I, iii, 4. [9] Enn. I, iii, 5. [10] Ibid. [11] Enn. I, iii, 1.

alectic is not with sense objects, but with the immaterial being of the intelligible world.[1] Sciences of the intelligibles are not posterior to their objects, but identical with them, for intelligence is complete in itself and identical with being.[2] Consequently, it seems that Plotinus would agree that dialectic is a science of scientific knowledge. Logic, however, has been distinguished from dialectic. Logic is not given the noble task of considering categories, of defining, and of relating things to being, but the menial work of treating the details of propositions and inferences.[3]

Plotinus' remarks about universals in relation to individuals are most interesting. Plotinus considers universals more real than particulars.[4] He also considers universals to be related to particulars as causes to effects.[5] However, he distinguishes between substantial and accidental predicates, since a substantial predicate is related to individuals as that in which they participate, but an accidental predicate is not related to particulars in the same way.[6] Apparently, careful dialectical distinctions are required for a minimum understanding of Aristotle's Categories, and metaphysical insights are necessary for a full appreciation of it.

Consequently, we can understand why Porphyry, thinking of the Categories as part of a science of being, decided that the work was in need of an introduction. A full treatment of the preconditions for understanding the Categories would have required the exercise of the highest dialectic.[7] However, a more modest account, involving merely the distinction and interrelation of the universals and a description of how they are predicated of individuals, would make it possible to understand the Categories as a minimum treatment of the intelligible structure of the sensible world, for Plotinus had given a special metaphysical significance to the relation of predication.

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[1] Enn. I, iii, 4. [2] Enn. V, ix, 7. [3] Enn. I, iii, 4-5.
[4] Enn. VI, iii, 9. [5] Enn. VI, ii, 20. [6] Enn. VI, i, 3.
[7] Porphyrius, Isagoge, trans. Boethius, II Commentaria in Porphyrium, ed. J. P. Migne, Patrologiae cursus completus, series Latina (Parisiis; 1844-1864), LXIV, 82A-B.

Porphyry undertook this modest task. The tree which bears his name is witness to his success in it, for that diagram illustrates relations between a genus, its species, differences, and individuals.[1] Aristotle had dealt with the predicables in his Topics, where he had used the relations of predicates to subjects to divide dialectical questions precisely to avoid making dialectics into a science.[2] Porphyry, following Plotinus' elevation of dialectic above logic, used the predicables to introduce novices to a scientific reading of the Categories.[3] In this way, at least the part of logic dealing with categories gained a real subject matter and became a science.

Porphyry was not so modest that he did not indicate the higher questions with which he was not about to deal in his introductory treatise. Do genera and species subsist or are they mere objects of thought? If they subsist, are they corporeal or incorporeal? Would they be separate from the sensibles or in them?[4] Even without answering these questions, Porphyry betrayed his presuppositions, for the way he asks the second question indicates his answer to the first, and there would be no point in asking the third question if the universals were not both subsistent and incorporeal. If the rest of logic became a very subordinate art, suited only to deal with elements of discourse, by Plotinus' transformation of Aristotle, the treatise on the categories became part of the highest science of the immaterial principles of material being.

Boethius' work is extremely important for medieval logic, for although much of his production was not discovered until the twelfth century, he made Porphyry's Isagoge, Aristotle's Categories, and Aristotle's On Interpretation available in Latin, with his own commentaries, for the entire period.[5] Boethius' interpretations of Aristotle, however, show defi-

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[1] Ibid., 103B-D. [2] Aristotle Topics i, $101^{b}11$-$105^{b}19$, $105^{a}7$-9.

[3] Ernest A. Moody illuminates Porphyry's reversal from Ockham's point of view in The Logic of William of Ockham (New York: Sheed & Ward, 1935), pp. 66-77, with special reference to species as a Porphyrian predicable.

[4] Porphyrius, op. cit., 82A-B.

[5] These works, with Boethius' commentaries, were called "the old logic" after they were supplemented by translations of the remainder of the Organon—"the new logic"—around the middle of the twelfth century; consult: Gilson, History of Christian Philosophy . . . , p. 603.

nite Platonic influences.[1]

First of all, Boethius considered logic to be both a science and an instrument of science conducing to the satisfaction of philosophic curiosity by directing the discovery and judgment of arguments.[2] This view permitted Boethius to consider the entire Organon as a unit,[3] rather than dividing it in two as Plotinus had done. Boethius divides the field of logic into three parts, dealing with definition, division, and collection or argument. Each of these involves both invention and judgment.[4] In making this division, Boethius apparently considers the processes of thinking themselves to be the subject matter of logic; the aim of the investigation is to direct thought to attain truth and to avoid error.[5]

Boethius thinks the Categories is not about things, but about expressions signifying things.[6] Nevertheless, the purpose of the work is to reduce the infinity of things to limits capable of scientific consideration.[7] Now Boethius considered the Isagoge necessary to the study of the Categories, for a category is a genus embracing differentiated species, a category has its own properties, and nine of the categories are accidents.[8] It is noteworthy here that Boethius uses the notion of property reflexively and applies it to the properties of the categories themselves and to other logical entities.[9] There is a similar suggestion of logical reflexivity in his application of the predicables to the division of the sciences with which he opens his first Commentary on Porphyry.[10]

Boethius did not ignore the questions about universals which Porphyry

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[1] Ibid., p. 98. [2] Boethius, op. cit., 74C-D, 72B.

[3] Boethius, I Commentaria in Porphyrium, P. L., LXIV, 13C-14A.

[4] Boethius, In Topica Ciceronis, P. L., LXIV, 1044C-1047D. I consider this to be the best general presentation of Boethius' view of logic.

[5] Ibid., 1044D-1045A.

[6] Boethius, In Categorias Aristotelis, P. L., LXIV, 162B.

[7] Ibid., 160B.

[8] Boethius, II Comm. . . . , P. L., LXIV, 78D-79B.

[9] Ibid., 79B.

[10] Boethius, I Comm. . . . , P. L., LXIV, 11A-B: "These things are converted to the division and partition of philosophy itself."

had raised but left unanswered.[1] Boethius follows what he considers to be the opinion of Aristotle in answering the questions, not because he agrees with it, but only because the Isagoge is introductory to Aristotle's Categories.[2] The opinion he ascribes to Aristotle is that the universals subsist materially in sensible things, but are understood in their pure immateriality apart from bodies.[3] To reach this conclusion, Boethius must assimilate universals to mathematical entities, which cannot be apart from bodies but can be understood without matter.[4] He considers the universals to be things by themselves, which are mixed up in sensible things and must be sorted out from the bodies with which the senses receive them to be contemplated by the mind alone.[5]

Now, this doctrine would not be much to my purpose, except that Boethius follows Porphyry both in considering a knowledge of the predicables to be a useful introduction to the Categories and in thinking such knowledge necessary for all three of the logical processes.[6] Of special interest is his explanation of how this knowledge is useful to demonstration.[7] In this explanation, Boethius argues that the genera are prior in nature, although they are posterior in our knowledge, and that genera and differences are causes not only of the thing but also of the conclusion of the demonstration.[8] He concludes that the Isagoge is of great help to the whole of logic; without it, all the rest of logic, which has such great power, can offer no entrance to the doctrine.[9]

In sum, Boethius developed the notion of logic as a study having a subject matter of its own--rational discourse. He unified it in all of its parts, dividing these parts according to different processes of reason, in each of which he distinguished the moments of discovery and judgment. At the same time, Boethius treated the universals as metaphysical principles and emphasized their importance for scientific knowledge. Moreover, he at least suggested a technique for making logic reflexive.

Avicenna further clarified the notion of logic. He considered that essential natures have three conditions: in their own being, in singulars,

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[1] Boethius, II Comm. . . . , P. L., LXIV, 82B-86A.
[2] Ibid., 86A. [3] Ibid. [4] Ibid., 94C. [5] Ibid., 84D.
[6] Ibid., 80A-82A. [7] Ibid., 81B-82A. [8] Ibid. [9] Ibid., 82A.

and in the intellect.[1] When we wish to know things scientifically, we collect them into the intellect; there, the various dispositions which logic studies happen to them.[2] Metaphysically considered, these logical dispositions are called "second intentions," as opposed to the essences themselves—"first intentions"—which are primary objects of understanding; the second intentions have intelligible being which does not depend on matter, at least not on corporeal matter.[3] Logic, for Avicenna, is both an instrument of other sciences and a science in its own right.[4] Logic is not primarily concerned with language, although logicians must consider language, for we use language in structures corresponding to arrangements of intentions.[5]

Avicenna contributed to the notion of logic, then, by defining its subject matter as a certain set of properties—metaphysically, second intentional entities—accruing to things in the intellect. If these second intentions could be identified with scientific knowledge itself, if Boethius' unity of logic with metaphysical principles and hints of reflexivity could be developed, and if Porphyry's notion of dialectic as a supreme knowledge of real things could be added to the other contributions, then logic could become a science of scientific knowledge, capable by itself of fulfilling our natural desire to know scientifically. Whatever the actual lines of historical influence were, Pseudo-Thomas did undertake to develop such a logic. I next undertake to examine it.

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[1] Avicenna, Logica, f. 2, r. B, quoted in Prantl, op. cit., II, p. 327.

[2] Ibid.

[3] Avicenna, Metaphysica i, 2, f. 70, v. A, quoted loc. cit., p. 328.

[4] Avicenna, Logica, f. 2, r. B, quoted loc. cit., p. 328.

[5] Avicenna, Logica, f. 3, r. B, quoted loc. cit., p. 330.

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