

METAPHYSICS

LET THOMAS AQUINAS TEACH IT

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PREFACE

Let Thomas Aquinas teach Metaphysics. That's the aim of this book, to present Metaphysics in the words of Thomas himself.

Right away there is a problem. Where do we find his teaching on Metaphysics? There is his Commentary on Aristotle's *Metaphysics*. (For the full text of Aristotle and Thomas, original languages and English, see my website: <http://www.josephkenny.joyeurs/CDtests/default2.htm>.) But there is no unity to that book. It is a collection of disconnected essays, with considerable overlap—that in contrast to other works of Aristotle, such as the *Physics*, which was composed as a unit, with an orderly plan.

To use Aristotle's *Metaphysics*, and Thomas' Commentary as they stand would frustrate both lecturer and student. In the area of Theology, Thomas faced the same problem in teaching the *Sentences* of Peter Lombard, as he complains in the *Prooemium* of his *Summa Theologiae*:

We have considered that students in this Science have not seldom been hampered by what they have found written by other authors, partly on account of the multiplication of useless questions, articles, and arguments; partly also because those things that are needful for them to know are not taught according to the order of the subject-matter, but according as the plan of the book might require, or the occasion of the argument offer; partly, too, because frequent repetition brought weariness and confusion to the minds of the readers.

If Thomas ever had to teach Metaphysics on a regular basis, I am sure he would have written his own *Summa Metaphysicae*. He never got around to writing such a work. The closest he came was in the *De ente et essentia*, a poney for a distraught student.

Nevertheless, scattered through his many works, there is adequate material for a text on Metaphysics. How should it be arranged and put together? Thomas himself shows us how. Where? Basically in the general methodology provided in his Commentary on the *Posterior Analytics*. Every science has (1) a subject, (2) principles and (3) properties.

This course begins with an Introduction, including the three elements Thomas says any introduction should include —Chapter 1

It then shows in what sense “being” is the subject of this science. It is being that goes beyond material being (*meta-physics*), to straddle the material and the spiritual world of being. It covers both substance and accidents. These differences make being **analogous**, not univocal. To understand this being, we must understand analogy. — Chapter 2

The primary subject is “substance”, while accidents are secondary. — Chapter 3

Being has multiple principles and causes. These are distinguished. —Chapter 4

The intrinsic principles of being are potency and act. They apply in different ways to matter/form, essence/existence, substance/accidents. — Chapter 5

Being has properties which are distinct only in concept. These are the transcendentals: one, thing/something, true, good, and beautiful. — Chapter 6

The major discussion will be on unity, truth and goodness (with the problems of evil). — Chapter 7

In its consideration of truth, metaphysics defends the principles of knowledge common to all sciences. It thus includes epistemology. Also, functioning as the “queen of all sciences”, it shows how sciences are distinguished and ordered among themselves. It thus provides the foundation for a philosophy of education, university curriculum, and library science. — Chapter 8

Being has extrinsic principles: efficient and final causes. It will be seen that where essence and existence are not identical, being is a participation in what is Being itself, dependent on it as an efficient cause, and tending to it as a final cause. — Chapter 9

CHAPTER 1

INTRODUCTION

Commentary on De Anima, Book I, lesson 1

§ 2. In the present treatise on the soul we find, first, an Introduction: in which the author does the three things that should be done in any Introduction. For in writing an Introduction one has three objects in view: first, to gain the reader's good will; secondly, to dispose him to learn; thirdly, to win his attention. The first object one achieves by showing the reader the value of the knowledge in question; the second by explaining the plan and divisions of the treatise; the third by warning him of its difficulties.

1. The value of knowledge and order of learning

Exposition of Liber de causis, preface

The highest felicity of man consists in the best activity belonging to his highest power, that is, his intellect, in attaining the most intellectual object. Furthermore, since an effect is known through its cause, it is clear that a cause is in its nature more intelligible than its effects, although at times effects are better known to us than causes, because our knowledge of universal and intelligible causes has been gathered from the particular things which fall under the senses. Absolutely speaking, therefore, the first causes of things must be in themselves the highest and the most intellectual objects, since they are the highest beings and the highest truths, being for other things the cause of their essence and truth, as the philosopher makes clear in the *Metaphysics*. It remains, however, that such primary causes are less well known as far as we are concerned, for our intellect stands to them as the eye of an owl to the light of the sun, which, owing to its excessive clarity, cannot be perfectly perceived.

It is proper, therefore, that the highest felicity that man can obtain in this life should consist in the contemplation of the first causes; for the little that can be known about them is more lovable and noble than everything that can be known about lesser things, as is clear from the words of the Philosopher in his *On the Parts of Animals*. And it is through the completion of this knowledge in us after the present life that man is made perfectly happy, according to the words of the Gospel: "This is eternal life, that they may know you, the only true God."

So the principal aim of the philosophers was that, through all their investigations of things, they might come to know the first causes. That is why they placed the science concerned with first causes last, and allotted the final period of their lives to its consideration. They began first of all with logic, which teaches the method of the sciences. Second, they went on to mathematics, which even boys are capable of learning. Third, they advanced to the philosophy of nature, which requires time because of the needed experience. Fourth, they proceeded to moral philosophy, of which a young person cannot be a suitable student. And finally they applied themselves to divine science, whose object is the first causes of things.

Aristotle: *On the parts of animals* I, 5, 644b33

The scanty conceptions to which we can attain of celestial things give us, from their excellence, more pleasure than all our knowledge of the world in which we live; just as a half glimpse of persons that we love is more delightful than a leisurely view of other things, whatever their number and dimensions.

BOOK I

ON ARISTOTLE'S INTRODUCTION

Lesson 1 *Three reasons why people naturally desire to know*

1. ...Accordingly, he says, first, that the desire to know belongs by nature to all men.

2. Three reasons can be given for this:

The first is that each thing naturally desires its own perfection. Hence matter is also said to desire form as any imperfect thing desires its perfection. Therefore, since the

intellect, by which man is what he is, considered in itself is all things potentially, and becomes them actually only through knowledge, because the intellect is none of the things that exist before it understands them, as is stated in Book III of *The Soul*, so each man naturally desires knowledge just as matter desires form.

3. The second reason is that each thing has a natural inclination to perform its proper operation, as something hot is naturally inclined to heat, and something heavy to

be moved downwards. Now the proper operation of man as man is to understand, for by reason of this he differs from all other things. Hence the desire of man is naturally inclined to understand, and therefore to possess scientific knowledge.

4. The third reason is that it is desirable for each thing to be united to its source, since it is in this that the perfection of each thing consists. This is also the reason why circular motion is the most perfect motion, as is proved in Book VIII of the *Physics*, because its terminus is united to its starting-point. Now it is only by means of his intellect that man is united to the separate substances, which are the source of the human intellect and that to which the human intellect is related as something imperfect to something perfect. It is for this reason, too, that the ultimate happiness of man consists in this union. Therefore man naturally desires to know. The fact that some men do not devote any study to this science does not disprove this thesis; for those who desire some end are often prevented from pursuing it for some reason or other, either because of the difficulty of attaining it, or because of other occupations. And in this way, too, even though all men desire knowledge, still not all devote themselves to the pursuit of it because they are held back by other things, either by pleasures or the needs of the present life; or they may even avoid the effort that learning demands because they are lazy. Now Aristotle makes this statement in order to show that it is not pointless to search for a science that is not useful for anything else, as happens in the case of this science, since a natural desire cannot exist in vain.

Wisdom deals with causes.

35. From what has been said he proves his major thesis, that is to say, that wisdom deals with the causes of things. He says that the reason “for undertaking this investigation,” i.e., the above piece of reasoning, is that the science which is called wisdom seems to be about first causes and principles. This is evident from the foregoing; for the more a man attains to a knowledge of the cause, the wiser he is. This is also evident from the foregoing; because the man of experience is wiser than one who has sensation alone without experience; and the artist is wiser than any man of experience; and among artists the architect is wiser than the manual laborer. And similarly among the arts and sciences the speculative are more scientific than the practical. All these things are dear from the foregoing remarks. It follows, then, that that science which is wisdom in an absolute sense is concerned with the causes of things. The method of arguing would be similar if we were to say that that which is hotter is more afire, and therefore that that which is afire in an absolute sense is hot in an absolute sense.

Lesson 2 *Six opinions about who is wise*

36. Having shown that wisdom is a knowledge of causes, the Philosopher’s aim here is to establish with what kinds of causes and what kinds of principles it is concerned. He shows that it is concerned with the most universal and primary causes, and he argues this from the definition of wisdom.

In regard to this he does three things. First, he formulates a definition of wisdom from the different opinions which men have about the wise man and about wisdom. Second (44), he shows that all of these are proper to that universal science which considers first and universal causes (“Now of these”). Third (50), he draws the conclusion at which he aims (“In view of everything”). In regard to the first he gives six common opinions which men have entertained about wisdom.

He states the first where he says “But since we are in search”; and this opinion is this: in general we all consider those especially to be wise **who know all things, as the case demands**, without having a knowledge of every singular thing. For this is impossible, since singular things are infinite in number, and an infinite number of things cannot be comprehended by the intellect.

37. Here he gives the second opinion, which is this: we hold that man to be wise who is capable, by reason of his intellect, of knowing **difficult things**, and those which are not easy for ordinary men to understand. For sensory perception, i.e., the knowing of sensible things, is common to all men, and is therefore easy and so not a matter of wisdom. That is to say, it is neither a mark nor the office of a wise man. Thus it is clear that whatever pertains properly to wisdom is not easily known by all.

38. Here he gives the third opinion, namely, that we say that he is wise who, regarding what he knows, is **more certain** than other men generally are.

39. Here he gives the fourth opinion, namely, that that man is said to be wiser in every science who can give the **causes** of anything that is brought into question, and can teach by means of this.

40. Here he gives the fifth opinion, which is this: among the many sciences that science which is more desirable and **willed for its own sake**, i.e., chosen for the sake of knowledge and for knowledge itself alone, is more of the nature of wisdom than one which is for the sake of any of the other contingent effects which can be caused by knowledge, such as the necessities of life, pleasure, and so forth.

41. Here he gives the sixth opinion, namely, that this wisdom, of which mention has been made, must be or is said to be “rather the more basic,” i.e., **nobler**, than “a subordinate science.” This can be understood from the foregoing. For in the field of the mechanical arts, subordinate artists are those who execute by manual operations the commands of superior artists, whom he referred to above as master artists and wise men.

42. That the notion of wisdom belongs to sciences which give orders rather than to those which take them, he proves by two arguments. The first is that subordinate sciences are directed to superior sciences. For subordinate arts are directed to the end of a superior art, as the art of horsemanship to the end of the military art. But in the opinion of all it is not fitting that a wise man should be directed by someone else, but that he should direct others. The second is that inferior artists are

induced to act by superior artists inasmuch as they rely upon superior artists for the things which they must do or make. Thus the shipbuilder relies upon the instructions of the navigator for the kind of form which a ship ought to have. However, it does not befit a wise man that he should be induced to act by someone else, but that he should use his knowledge to induce others to act.

43. These, then, are the kind of opinions which men have of wisdom and the wise; and from all of these a description of wisdom can be formulated, so that the wise man is described as one who knows all, even difficult matters, with certitude and through their cause; who seeks this knowledge for its own sake; and who directs others and induces them to act. And in this way the major premise of the syllogism becomes evident. For every wise man must be such, and conversely whoever is such is wise.

These six attributes are found in the metaphysician.

44. Here he shows that all of the above attributes come together in the man who knows the first and universal causes of things; and he follows the same order as he did above. Thus he held first that knowledge of **all things in the highest degree** belongs to him who has universal knowledge. This was the first opinion, and it is made clear in this way: 'Whoever knows universals knows in some respect the things which are subordinate to universals, because he knows the universal in them.' But all things are subordinate to those which are most universal. Therefore the one who knows the most universal things, knows in a sense all things.

45. Here he proves that the second attribute belongs to the same person, by the following argument. Those things which are farthest removed from the senses are **difficult** for men to know; for sensory perception is common to all men since all human knowledge originates with this. But those things which are most universal are farthest removed from sensible things, because the senses have to do with singular things. Hence universals are the most difficult for men to know. Thus it is clear that that science is the most difficult which is most concerned with universals.

46. But the statement which appears in Book I of the *Physics* seems to contradict this. For it is said there that more *universal* things are known first by us; and those things which are known first are those which are easier. Yet it must be said that those things which are more universal **according to simple apprehension** are known first; for being is the first thing that comes into the intellect, as Avicenna says, and animal comes into the intellect before man does. For just as in the order of nature, which proceeds from potentiality to actuality, animal is prior to man, so too in the genesis of knowledge the intellect conceives animal before it conceives man.

But with respect to the investigations of natural properties and causes, less universal things are known first, because we discover universal causes by means of the particular causes which belong to one genus or species. Now those things which are universal **in causing** are known

subsequently by us (notwithstanding the fact that they are things which are primarily knowable according to their nature), although things which are universal **by predication** are known to us in some way before the less universal (notwithstanding the fact that they are not known prior to singular things). For in us sensory knowledge, which is cognitive of singular things, precedes intellectual knowledge, which is about universals. And some importance must also be attached to the fact that he does not say that the most universal things are the most difficult absolutely, but "just about." For those things which are entirely separate from matter in being, as immaterial substances, are more difficult for us to know than universals. Therefore, even though this science which is called wisdom is the first in dignity, it is still the last to be learned.

47. Here he shows that the third attribute belongs to the same science, by this argument: the more any sciences are prior by nature, the more **certain** they are. This is clear from the fact that those sciences which are said to originate as a result of adding something to the other sciences are less certain than those which take fewer things into consideration; for example, arithmetic is more certain than geometry because the objects considered in geometry are a result of adding to those considered in arithmetic. This becomes evident if we consider what these two sciences take as their first principle, namely, the point and the unit. For the point adds to the unit the notion of position, because undivided being constitutes the intelligible structure of the unit; and insofar as this has the function of a measure it becomes the principle of number. And the point adds to this the notion of position. However, particular sciences are subsequent in nature to universal sciences, because their subjects add something to the subjects of universal sciences. For example, it is evident that mobile being, with which the philosophy of nature deals, adds to being pure and simple, with which metaphysics is concerned, and to quantified being, with which mathematics is concerned. Hence that science which treats of being and the most universal things is the most certain. Moreover, the statement here that this science deals with fewer principles is not opposed to the one made above, that it knows all things; for the universal takes in fewer inferiors actually, but many potentially. And the more certain a science is, the fewer actual things it has to consider in investigating its subject-matter. Hence the practical sciences are the least certain, because they must consider the many circumstances attending individual effects.

48. Here he proves that the fourth attribute belongs to the same science, by this argument: that science is more instructive, or better able to teach, which is concerned to a greater degree with **causes**. For only those teach who assign the causes of every single thing, because scientific knowledge comes about through some cause, and to teach is to cause knowledge in another. But that science which considers universals considers the first of all the causes. Hence it is evidently the best fitted to teach.

49. Here he proves that the fifth attribute belongs to the same science, by this argument: it is the office of those sciences which deal with things that are most knowable,

most properly to know and understand **for their own sake**, i.e., for the sake of those sciences themselves and not for something else. But it is the sciences that deal with first causes which consider the most knowable things. Therefore those sciences are desired most for their own sake. He proves the first premise thus: One who most desires knowledge for the sake of knowledge most desires scientific knowledge. But the highest kind of knowledge is concerned with things that are most knowable. Therefore those sciences are desired most for their own sake which have to do with things that are most knowable. He proves the second premise thus: Those things from which and by reason of which other things are known are more knowable than the things which are known by means of them. But these other things are known through causes and principles, and not vice versa, etc.

50. Here he proves that the sixth attribute belongs to the same science, by the following argument: that science which considers the final cause, or that for the sake of which particular things are done, is related to the other sciences as a chief or **master science** is to a subordinate or ancillary one, as is evident from the foregoing remarks. For the navigator, to whom the use, or end, of the ship belongs, is a kind of master artist in relation to the shipbuilder who serves him. But the aforesaid science is concerned most with the final cause of all things. This is dear from the fact that that for the sake of which all particular things are done is the good of each, i.e., a particular good. But the end in any class of things is a good; and that which is the end of all things, i.e., of the universe itself, is the greatest good in the whole of nature. Now this belongs to the consideration of the science in question, and therefore it is the chief or architectonic science with reference to all the others.

51. Here he draws from the foregoing arguments his intended conclusion, saying that it is clear from everything that has been said that the name wisdom which we are investigating belongs to the same science which considers or speculates about first principles and causes. This is evident from the six primary conditions which clearly pertain to the science that considers universal causes. But because the sixth condition touched on the consideration of the end, which was not clearly held to be a cause among the ancient philosophers, as will be said below (1177), he therefore shows in a special way that this condition belongs to the same science, namely, the one which considers first causes. For the end, which is a good and that for the sake of which other things are done, is one of the many causes. Hence the science which considers first and universal causes must also be the one which considers the universal end of all things, which is the greatest good in the whole of nature.

Lesson 3 *Why this science is called speculative*

53. First, he gives this argument. No science in which knowledge itself is sought for its own sake is a practical science, but a speculative one. But that science which is wisdom, or philosophy as it is called, exists for the sake of knowledge itself. Hence it is speculative and not practical. He proves the minor premise in this way.

Whoever seeks as an end to escape from ignorance tends toward knowledge for itself. But those who philosophize seek as an end to escape from ignorance. Therefore they tend towards knowledge for itself.

54. That they seek to escape from ignorance is made clear from the fact that those who first philosophized and who now philosophize did so from wonder about some cause, although they did this at first differently than now. For at first they wondered about less important problems, which were more obvious, in order that they might know their cause; but later on, progressing little by little from the knowledge of more evident matters to the investigation of obscure ones, they began to raise questions about more important and hidden matters, such as the changes undergone by the moon, namely, its eclipse, and its change of shape, which seems to vary inasmuch as it stands in different relations to the sun. And similarly they raised questions about the phenomena of the sun, such as its eclipse, its movement and size; and about the phenomena of the stars, such as their size, arrangement, and so forth; and about the origin of the whole universe, which some said was produced by chance, others by an intelligence, and others by love.

55. Further, he points out that perplexity and **wonder** arise from ignorance. For when we see certain obvious effects whose cause we do not know, we wonder about their cause. And since wonder was the motive which led men to philosophy, it is evident that the philosopher is, in a sense, a philo-myth, i.e., a lover of myth, as is characteristic of the poets. Hence the first men to deal with the principles of things in a mythical way, such as Perseus and certain others who were the seven sages, were called the theologizing poets. Now the reason why the philosopher is compared to the poet is that both are concerned with wonders. For the myths with which the poets deal are composed of wonders, and the philosophers themselves were moved to philosophize as a result of wonder. And since wonder stems from ignorance, they were obviously moved to philosophize in order to escape from ignorance. It is accordingly evident from this that "they pursued" knowledge, or diligently sought it, only for itself and not for any utility or usefulness.

56. Now we must note that, while this science was first designated by the name wisdom, this was later changed to the name philosophy, since they mean the same thing. For while the ancients who pursued the study of wisdom were called sophists, i.e., wise men, Pythagoras, when asked what he professed himself to be, refused to call himself a wise man as his predecessors had done, because he thought this was presumptuous, but called himself a philosopher, i.e., a lover of wisdom. And from that time the name "wise man" was changed to "philosopher," and "wisdom" to "philosophy." This name also contributes something to the point under discussion, for that man seems to be a lover of wisdom who seeks wisdom, not for some other reason, but for itself alone. For he who seeks one thing on account of something else, has greater love for that on whose account he seeks than for that which he seeks.

57. Here he proves the same point by means of an example. The statement (he says) that wisdom or philosophy is not sought for any utility but for knowledge itself is proved by “what has happened,” i.e., by what has occurred in the case of those who have pursued philosophy. For when nearly all those [arts] were discovered which are necessary for life, “leisure” (i.e., for the sort of pleasure which consists in a life of ease), and learning, such as the logical sciences, which are not sought for themselves but as introductions to the other arts, then man began for the first time to seek this kind of prudence, namely, wisdom. And from this it is clear that wisdom is not sought because of any necessity other than itself but for itself a one; for no one seeks something which he already possesses. Hence, because wisdom was sought after all other knowledge had been discovered, it is evident that it was not sought for some reason other than itself but for itself.

Why this science is liberal

58. Here he proves the second attribute, namely, that wisdom is free; and he uses the following argument: that man is properly said to be free who does not exist for someone else but for himself. For slaves exist for their masters, work for them, and acquire for them whatever they acquire. But free men exist for themselves inasmuch as they acquire things for themselves and work for themselves. But only this science exists for itself; and therefore among all the sciences only this science is free.

59. Now we must note that this can be understood in two ways. In one way, the expression “only this” may indicate **every speculative science** as a class. And then it is true that only this class of science is sought for itself. Hence, only those arts which are directed to knowing are called free [or liberal] arts, whereas those which are directed to some useful end attained by action are called mechanical or servile arts.

Understood in another way, the expression may specifically indicate this philosophy or wisdom which deals with the **highest causes**; for the final cause is also one of the highest causes, as was stated above (51). Therefore this science must consider the highest and universal end of all things. And in this way all the other sciences are subordinated to it as an end. Hence only this science exists in the highest degree for itself.

Why this science is super-human

60. Here he proves the third attribute, namely, that this science is not a human [possession]. In regard to this he does two things. First, he proves his thesis. Second (61), he criticizes an erroneous view held by certain men (“Hence, according to Simonides”).

He proves his thesis by the following argument. A science which is free in the highest degree cannot be a possession of that nature which is servile and subordinate in many respects. But **human nature is servile** “in many respects,” i.e., in many ways. Therefore this science is not a human possession. Now human nature is said to be servile insofar as it stands in need of many things. And on this account it happens that man sometimes neglects what

should be sought for its own sake because of the things necessary for life. Thus it is said in Book III of the *Topics* that it is better to philosophize than to become wealthy, although sometimes becoming wealthy is more desirable, that is, to one lacking life’s necessities. From this it is clear that that wisdom is sought for itself alone which does not belong to man as his proper possession. For man has as his possession what he can have at his command and use freely. But that science which is sought for itself alone, man cannot use freely, since he is often kept from it because of the necessities of life. Nor again is it subject to man’s command, because man cannot acquire it perfectly. Yet that very small part of it which he does have outweighs all the things known through the other sciences.

61. Here he rejects the error of a certain poet, Simonides, who said that it is proper to God alone to have the honor of desiring that knowledge which ought to be sought for its own sake and not for the sake of something else. But it is not fitting that man should not seek that knowledge which is in keeping with his own condition, namely, that which is directed to the necessities of life required by man.

62. Now Simonides’ error came from that of certain poets who said that the Deity is envious, and that since He is envious He does not desire that the things which pertain to His honor should be shared by all. And if God is envious of men in other things, He is rightly more so in this case, i.e., in the case of the science which is sought for its own sake, which is the most honorable of all the sciences. And according to the opinion of these men it follows that all who are imperfect are unfortunate’ for they said that men are fortunate as a result of the providence of the gods, who communicate their goods to men. Hence as a result of the envy of the gods, who are unwilling to communicate their goods, it follows that men, who remain outside the perfection of this science, are unfortunate.

63. But the basis of this opinion is most false, because it is not fitting that any divine being should be envious. This is evident from the fact that envy is sadness at someone else’s prosperity. But this can occur only because the one who is envious thinks that someone else’s good diminishes his own. Now it is impossible that God’ should be sad, because He is not subject to evil of any kind. Nor can His goodness be diminished by someone else’s goodness, since every good flows from His goodness as from an unfailing spring. Hence Plato also said that there is no envy of any kind in God.’ But the poets have lied not only in this matter but in many others, as is stated in the common proverb.

Why this science is most honorable

64. Here he proves the fourth attribute, namely, that this is the most honorable science, by the following argument. That science which is most divine is most honorable, just as God Himself is also the most honorable of all things. But this science is the most divine, and is therefore the most honorable. The minor premise is proved in this way: a science is said to be divine in two ways, and only this

science is said to be divine in both ways. First, the science which God has is said to be divine; and second, the science which is about divine matters is said to be divine. But it is evident that only this science meets both of these requirements, because, since this science is about first causes and principles, it must be about God; for God is understood in this way by all inasmuch as He is one of the causes and a principle of things. Again, such a science which is about God and first causes, either God alone has or, if not He alone, at least He has it in the highest degree. Indeed, He alone has it in a perfectly comprehensive way. And He has it in the highest degree inasmuch as it is also had by men in their own way, although it is not had by them as a human possession, but as something borrowed from Him.

65. From these considerations he draws the further conclusion that all other sciences are more necessary than this science for use in practical life, for these sciences are sought least of all for themselves. But none of the other sciences can be more excellent than this one.

The relation between wonder and wisdom

66. He now gives the goal toward which this science moves. He says that its progression comes to rest, or is terminated, in the contrary of what was previously found in those who first sought this science, as also happens in the case of natural generations and motions. For each motion is terminated in the contrary of that from which the motion begins. Hence, since investigation is a kind of movement towards knowledge, it must be terminated in the contrary of that from which it begins. But, as was stated above (53), the investigation of this science began with man's **wonder** about all things, because the first philosophers wondered about less important matters and subsequent philosophers about more hidden ones. And the object of their wonder was whether the case was like that of strange chance occurrences, i.e., things which seem to happen mysteriously by chance. For things which happen as if by themselves are called chance occurrences. For men wonder most of all when things happen by **chance** in this way, supposing that they were foreseen or determined by some cause. For chance occurrences are not determined by a cause, and wonder results from ignorance of a cause. Therefore when men were not yet able to recognize the causes of things, they wondered about all things as if they were chance occurrences; just as they wondered about changes in the course of the sun, which are two in number, namely, the solstices, that of

winter and that of summer. For at the summer solstice the sun begins to decline toward the south, after previously declining toward the north. But at the winter solstice the opposite occurs. And they wondered also that the diagonal of a square is not commensurable with a side. For since to be immeasurable seems to belong to the indivisible alone (just as unity alone is what is not measured by number but itself measures all numbers), it seems to be a matter of wonder that something which is not indivisible is immeasurable, and consequently that what is not a smallest part is immeasurable. Now it is evident that the diagonal of a square and its side are neither indivisible nor smallest parts. Hence it seems a matter of wonder if they are not commensurable.

67. Therefore, since philosophical investigation began with wonder, it must end in or arrive at the contrary of this, and this is to advance to the worthier view, as the common proverb agrees, which states that one must always advance to the better. For what that opposite and worthier view is, is evident in the case of the above wonders, because when men have already learned the causes of these things they do not wonder. Thus the geometrician does not wonder if the diagonal is incommensurable with a side. For he knows the reason for this, namely, that the proportion of the square of the diagonal to the square of a side is not as the proportion of the square of a number to the square of a number, but as the proportion of two to one. Hence it follows that the proportion of a side to the diagonal is not as the proportion of number to number. And from this it is evident that they cannot be made commensurable. For only those lines are commensurable which are proportioned to each other as number to number. Hence the goal of this science to which we should advance will be that in knowing the causes of things we do not wonder about their effects.

68. From what has been said, then, it is evident what the nature of this science is, namely, that it is speculative and free, and that it is not a human possession but a divine one; and also what its aim is, for which the whole inquiry, method, and art must be conducted. For its goal is the first and universal causes of things, about which it also makes investigations and establishes the truth. And by reason of the knowledge of these it reaches this goal, namely, that there should be no wonder because the causes of things are known.

The value of pre-scientific, common-sense metaphysics

Gives us a general, vague knowledge of the **general** principles of being and knowledge, valuable even to the extent of knowing the existence of God and some basic truths about him.

Summa theologiae II-II, q. 10, a. 7:

Many of the gentiles received revelation of Christ... If, however, some were saved without receiving any revelation, they were not saved without faith in a mediator, for, though they did not believe in Him explicitly, they did, nevertheless, have implicit faith through believing in Divine providence, since they believed that God would deliver mankind in whatever way was pleasing to Him, and according to the revelation of the Spirit of those who knew the truth, as

stated in Job 35:11: “Who teaches us more than the beasts of the earth.”

Knowledge of existence of God: Common sense
 Analytical
 Revelation (ST I q1 a1)

This knowledge does not extend to the **particular** science of things of this world, which we are totally ignorant of until we learn them by ourselves or from a teacher.

QD de veritate 11, a. 1

We must give a similar explanation of the acquisition of knowledge. For certain seeds of knowledge pre-exist in us, namely, the first concepts of understanding, which by the light of the agent intellect are immediately known through the species abstracted from sensible things. These are either complex, as axioms, or simple, as the notions of being, of the one, and so on, which the understanding grasps immediately. In these general principles, however, all the consequences are included as in certain seminal principles. When, therefore, the mind is led from these general notions to actual knowledge of the particular things, which it knew previously in general and, as it were, potentially, then one is said to acquire knowledge.

Summa theologiae I-II, q.89, a.6

It is impossible for venial sin to be in anyone with original sin alone, and without mortal sin. The reason for this is because before a man comes to the age of discretion, the lack of years hinders the use of reason and excuses him from mortal sin, wherefore, much more does it excuse him from venial sin, if he does anything which is such generically. But when he begins to have the use of reason, he is not entirely excused from the guilt of venial or mortal sin. Now the first thing that occurs to a man to think about then, is to deliberate about himself. And if he then direct himself to the due end, he will, by means of grace, receive the remission of original sin: whereas if he does not then direct himself to the due end, and as far as he is capable of discretion at that particular age, he will sin mortally, for through not doing that which is in his power to do. Accordingly thenceforward there cannot be venial sin in him without mortal, until afterwards all sin shall have been remitted to him through grace.

Summa theologiae I, q.2, a.1, ad 1

Reply to Objection 1: To know that God exists in a general and confused way is implanted in us by nature, inasmuch as God is man's beatitude. For man naturally desires happiness, and what is naturally desired by man must be naturally known to him. This, however, is not to know absolutely that God exists; just as to know that someone is approaching is not the same as to know that Peter is approaching, even though it is Peter who is approaching; for many there are who imagine that man's perfect good which is happiness, consists in riches, and others in pleasures, and others in something else.

This knowledge is intuitive, confused and non-analytic. In traditional cultures it may be expressed in the form of stories or proverbs.

Scientific metaphysics begins with **wonder**, which is a desire to understand something we do not yet understand, as we see in the Prologue.

[The following from Lawrence Ejembi:] The value of common sense metaphysics should not be underestimated, because it has a great impact on the uneducated people. This impact includes:

- It helps them to know and promote the dignity of human life.
- It makes them live virtuously because they do not want the gods to be angry with them, and they also want to become ancestors.
- It makes them have respect for the dead.
- It fulfills their quest for an object of worship.
- It makes them think that they have an ultimate goal to achieve in this life.
- It gives meaning to their life, and helps them strive for that goal.
- It brings them from hopelessness to hope.

2. Order

THOMAS AQUINAS: PROLOGUE

When several things are ordained to one thing, one of them must rule or govern and the rest be ruled or governed, as the Philosopher, teaches in the *Politics*. This is evident in the union of soul and body, for the soul naturally commands and the body obeys. The same thing is true of the soul's powers, for the concupiscible and irascible appetites are ruled in a natural order by reason. Now all the sciences and arts are ordained to one thing, namely, to man's perfection, which is happiness. Hence one of these sciences and arts must be the mistress of all the others, and this rightly lays claim to the name *wisdom*; for it is the office of the wise man to direct others.

We can discover which science this is and the sort of things with which it deals by carefully examining the qualities of a good ruler; for just as men of superior intelligence are naturally the rulers and masters of others, whereas those of great physical strength and little intelligence are naturally slaves, as the Philosopher says in the aforementioned book in a similar way that science which is intellectual in the highest degree should be naturally the ruler of the others. This science is the one which treats of the most intelligible objects.

Now the phrase "most intelligible objects" can be understood in three ways. (1) First, from the viewpoint of the order of knowing; for those things from which the intellect derives certitude seem to be more intelligible. Therefore, since the certitude of science is acquired by the intellect knowing **causes**, a knowledge of causes seems to be intellectual in the highest degree. Hence that science which considers first causes also seems to be the ruler of the others in the highest degree.

(2) Second, this phrase can be understood by comparing the intellect with the senses; for while sensory perception is a knowledge of particulars, the intellect seems to differ from sense by reason of the fact that it comprehends universals. Hence that science is pre-eminently intellectual which deals with the most **universal principles**. These principles are being and those things which naturally accompany being, such as unity and plurality, potency and act. Now such principles should not remain entirely undetermined, since without them complete knowledge of the principles which are proper to any genus or species cannot be had. Nor again should they be dealt with in any one particular science, for, since a knowledge of each class of beings stands in need of such principles, they would with equal reason be investigated in every particular science. It follows, then, that such principles should be treated by one common science, which, since it is

intellectual in the highest degree, is the mistress of the others.

(3) Third, this phrase can be understood from the viewpoint of the intellect's own knowledge. For since each thing has intellective power by virtue of being free from matter, those **things** must be **intelligible in the highest degree** which are altogether separate from matter. For the intellect and the intelligible object must be proportionate to each other and must belong to the same genus, since the intellect and the intelligible object are one in act. Now those things are separate from matter in the highest degree which abstract not only from signate matter (as the natural forms taken universally of which the philosophy of nature treats) but from sensible matter altogether; and these are separate from matter not only in their intelligible constitution (ratio), as the objects of mathematics, but also in being (esse), as God and the intelligences. Therefore the science which considers such things seems to be the most intellectual and the ruler or mistress of the others.

Now this threefold consideration should be assigned to one and the same science and not to different sciences, because the aforementioned separate substances are the universal and first causes of being. Moreover, it pertains to one and the same science to consider both the proper causes of some genus and the genus itself; for example, the philosophy of nature considers the principles of a natural body. Therefore, it must be the office of one and the same science to consider the separate substances and being in general (*ens commune*), which is the genus of which the aforementioned substances are the common and universal causes.

From this it is evident that, although this science (metaphysics or first philosophy) studies the three things mentioned above, it does not investigate any one of them as its subject, but only being in general. For the subject of a science is the genus whose causes and properties we seek, and not the causes themselves of the particular genus studied; for a knowledge of the causes of some genus is the goal to which the investigation of a science attains. Now although the subject of this science is being in general, the whole of it is predicated of those things which are separate from matter both in their intelligible constitution and in being. For it is not only those things which can never exist in matter that are said to be separate from matter in their intelligible constitution and being, such as God and the intellectual substances, but also those which can exist without matter, as being in general. This could not be the case, however, if their being depended on

matter.

Therefore in accordance with the three things mentioned above from which this science derives its perfection, three names arise. It is called (3) *divine science or theology* inasmuch as it considers the aforementioned substances. (2) It is called *metaphysics* inasmuch as it considers being and the attributes which naturally accompany being (for

things which transcend the physical order are discovered by the process of analysis, as the more common are discovered after the less common). (1) And it is called *first philosophy* inasmuch as it considers the first causes of things. Therefore it is evident what the subject of this science is, and how it is related to the other sciences, and by what names it is designated.

3. Difficulties & method of solving them

Commentary on the Nichomachean Ethics, Book 6, lect. 7:

[Aristotle] raises the question why a boy can become a mathematician but cannot become wise, that is to say a metaphysician or physicist, in other words a natural philosopher. His reply to this, as far as the philosophy of nature is concerned, is that mathematical entities are known by abstraction from sensible things, which are the objects of experience, and as a result a great length of time is not needed to grasp them. The principles of natural things, however, which are not separated from sensible things, are known through experience, for which much time is needed.

As far as wisdom is concerned, he adds that the young do not believe, that is, do not understand with their mind, things pertaining to wisdom or metaphysics, though they may speak them with their lips. But the nature of mathematical entities is not obscure to them, because their definitions concern things that can be imagined, whereas the objects of metaphysics are purely intelligible. Now the young can easily grasp what falls under the imagination, but they cannot understand with their mind whatever goes beyond sense and imagination, for their minds are not yet vigorous and trained to such reflections because of the shortness of their lives and the many physical changes they are undergoing.

So the proper order of learning will be the following. First, boys should be instructed in logical matters, because logic teaches the method of the whole of philosophy. Second, they are to be instructed in mathematics, which does not require experience and does not transcend the imagination. Third, they should be trained in the natural sciences which, though not transcending sense and imagination, nevertheless require experience. Fourth, they are to be instructed in the moral sciences, which require experience and a soul free from passion, as is said in the first book. Fifth, they should be taught matters concerning wisdom and divine science, which go beyond the imagination and require a vigorous mind.

BOOK II: THE SEARCH FOR TRUTH AND CAUSES

Lesson 1

273. ...First philosophy considers **truth** in a different way than the particular sciences do. Each of the particular sciences considers a particular truth out a definite class of beings; e.g., geometry deals with the continuous quantities of bodies, and arithmetic with numbers; whereas first philosophy considers what is universally true of things. Therefore, it pertains to this science to consider in what respects man is capable of knowing the truth.

274. First, he states what he intends to prove. He says that “theoretical knowledge,” i.e., the contemplative or speculative understanding of truth, is in one sense easy and in another, difficult.

275. Second, he explains what he intends to prove: first, in what sense it is easy to know the truth; and second (278), in what sense it is difficult (“But the fact”). He shows in what sense it is **easy** to know the truth, by giving three indications:

The first is this: while no man can attain a complete knowledge of the truth, still no man is so completely

devoid of truth that he knows nothing about it. This is shown by the fact that anyone can make a statement about the truth and the nature of things, which is a sign of intellectual reflection.

276. Here he gives the second indication. He says that, while the amount of truth that one man can discover or contribute to the knowledge of truth by his own study and talents is small compared with a complete knowledge of truth, nevertheless what is known as a result of “the combined efforts” of all, i.e., what is discovered and collected into one whole, becomes quite extensive. This can be seen in the case of the particular arts, which have developed in a marvelous manner as a result of the studies and talents of different men.

277. Third, he shows that the same thing is true by citing a common proverb. He concludes from the foregoing that since anyone can attain some knowledge of the truth, even though it be little, the situation in the case of knowledge is like the one that we speak of in the proverb “Who will miss a door?” i.e., the outer door of a house. For it is difficult to know what the interior of a house is like, and a man is easily deceived in such matters; but just

as no one is mistaken about the entrance of a house, which is evident to all and is the first thing that we perceive, so too this is the case with regard to the knowledge of truth; for those truths through which we enter into a knowledge of others are known to all, and no man is mistaken about them. Those first principles which are naturally apprehended are truths of this sort, e.g., “It is impossible both to affirm and deny something at the same time,” and “Every whole is greater than each of its parts,” and so on. On the other hand, there are many ways in which error may arise with respect to the conclusions into which we enter through such principles as through an outer door. Therefore, it is easy to know the truth if we consider that small amount of it which is comprised of self-evident principles, through which we enter into other truths, because this much is evident to all.

278. Here he explains in what sense it is **difficult** to know the truth. He says that our inability to grasp the whole truth and a part of it shows the difficulty involved in the search for truth. In support of this we must consider his statement that the truth through which we gain admission to other truths is known to all. Now there are two ways in which we attain knowledge of the truth.

The first is the method of **analysis**, by which we go from what is complex to what is simple or from a whole to a part, as it is said in Book I of the *Physics* that the first objects of our knowledge are confused wholes. Now our knowledge of the truth is perfected by this method when we attain a distinct knowledge of the particular parts of a whole.

The other method is that of **synthesis**, by which we go from what is simple to what is complex; and we attain knowledge of truth by this method when we succeed in knowing a whole. Thus the fact that man is unable to know perfectly in things a whole and a part shows the difficulty involved in knowing the truth by both of these methods.

279. He gives the reason for this difficulty. Here too it must be noted that, in all cases in which there is a certain relationship between two things, an effect can fail to occur in two ways, i.e., because of either one of the things involved. For example, if wood does not burn, this may happen either because the fire is not strong enough or because the wood is not combustible enough. And in a similar way the eye may be prevented from seeing a visible object either because the eye is weak or because the visible object is in the dark. Therefore, in like manner, it may be difficult to know the truth about things either (1) because **things** themselves are **imperfect** in some way or (2) because of some **weakness** on the part of our **intellect**.

280. (1) Now it is evident that we experience difficulty in knowing the truth about some things because of the things themselves; for since each thing is knowable insofar as it is an actual being, as will be stated below in Book IX (1894) of this work, then those things which are deficient and imperfect in being are less knowable

by their very nature; e.g., matter, motion, and time are less knowable because of the imperfect being which they have, as Boethius says in his book *The Two Natures*.

281. Now there were some philosophers who claimed that the difficulty experienced in knowing the truth is wholly attributable to things themselves, because they maintained that nothing is fixed and stable in nature but that everything is in a state of continual change, as will be stated in Book IV (683) of this work. But the Philosopher denies this, saying that even though the difficulty experienced in knowing the truth can perhaps be twofold because of different things, i.e., our intellect and things themselves, still the principal source of the difficulty is not things but our intellect.

282. He proves this in the following way. If this difficulty were attributable principally to things, it would follow it we would know best those things which are most knowable by nature. But those things which are most knowable by nature are those which are most actual, i.e., immaterial and unchangeable things, yet we know these least of all.

Obviously, then, the difficulty experienced in knowing the truth is due principally to some weakness on the part of our intellect. From this it follows that our soul's intellectual power is related to those immaterial beings, which are by nature the most knowable of all, as the eyes of owls are to the light of day, which they cannot see because their power of vision is weak, although they do see dimly lighted things.

283. But it is evident that this simile is not adequate; for since a sense is a power of a bodily organ, it is made inoperative as a result of its sensible object being too intense. But the intellect is not a power of a bodily organ and is not made inoperative as a result of its intelligible object being too intelligible. Therefore, after understanding objects that are highly intelligible our ability to understand less intelligible objects is not decreased but increased, as is stated in Book III of *The Soul*.

284. Therefore it must be said that a sense is prevented from perceiving some sensible object for two reasons: first, (1) because a sensory organ is rendered inoperative as a result of its sensible object being too intense (this does not occur in the case of the intellect); second, (2) because of some deficiency in the ability of a sensory power to perceive its object; for the powers of the soul in all animals do not have the same efficacy. Thus, just as it is proper to man by nature to have the weakest sense of smell, in a similar way it is proper to an owl to have the weakest power of vision, because it is incapable of perceiving the light of day.

285. Therefore, since the human soul occupies the lowest place in the order of intellective substances, it has the least intellective power. As a matter of fact, just as it is by nature the actuality of a body, although its intellective power is not the act of a bodily organ, in a similar way it has a natural capacity to know the truth about corporeal and sensible things. These are less knowable by nature

because of their materiality, although they can be known by abstracting sensible forms from phantasms. And since this process of knowing truth befits the nature of the human soul insofar as it is the form of this kind of body (and whatever is natural always remains so), it is possible for the human soul, which is united to this kind of body, to know the truth about things only insofar as it can be elevated to the level of the things which it understands **by abstracting from phantasms**. However, by this process it cannot be elevated to the level of knowing the quiddities of immaterial substances because these are not on the same level as sensible substances. Therefore it is impossible for the human soul, which is united to this kind of body, to apprehend separate substances by knowing their quiddities.

286. For this reason the statement which Averroes makes at this point in his *Commentary* is evidently false, i.e., that the Philosopher does not prove here that it is just as impossible for us to understand abstract substances as it is for a bat to see the sun. The argument that he gives is wholly ridiculous; for he adds that, if this were the case, nature would have acted in vain because it would have made something that is naturally knowable in itself to be incapable of being known by anything else. It would be the same as if it had made the sun incapable of being seen.

This argument is not satisfactory for two reasons. First, the end of separate substances does not consist in being understood by our intellect, but rather the converse. Therefore, if separate substances are not known by us, it does not follow that they exist in vain; for only that exists in vain which fails to attain the end for which it exists. Second, even though the quiddities of separate substances are not understood by us, they are understood by other intellects. The same is true of the sun; for even though it is not seen by the eye of the owl, it is seen by the eye of the eagle.

287. He shows how men assist each other to know the truth; for one man assists another to consider the truth in two ways—directly and indirectly.

One is assisted **directly** by those who have discovered the truth; because, as has been pointed out, when each of our predecessors has discovered something about the truth, which is gathered together into one whole, he also introduces his followers to a more extensive knowledge of truth.

One is assisted **indirectly** insofar as those who have preceded us and who were wrong about the truth have bequeathed to their successors the occasion for exercising their mental powers, so that by diligent discussion the truth might be seen more clearly.

288. Now it is only fitting that we should be grateful to those who have helped us attain so great a good as knowledge of the truth. Therefore he says that “It is only right that we should be grateful,” not merely to those whom we think have found the truth and with whose views we agree by following them, but also to

those who, in the search for truth, have made only superficial statements, even though we do not follow their views; for these men too have given us something because they have shown us instances of actual attempts to discover the truth. By way of an example he mentions the founders of music; for if there “had been no Timotheus,” who discovered a great part of the art of music, we would not have many of the facts that we know about melodies. But if Timotheus had not been preceded by a wise man named “Phrynis,” he would not have been as well off in the subject of music. The same thing must be said of those philosophers who made statements of universal scope about the truth of things; for we accept from certain of our predecessors whatever views about the truth of things we think are true and disregard the rest. Again, those from whom we accept certain views had predecessors from whom they in turn accepted certain views and who were the source of their information.

Lesson 5

331. Having shown that the study of truth is in one sense difficult and in another easy, and that it belongs preeminently to first philosophy, the Philosopher now exposes the proper **method** of investigating the truth. In regard to this he does two things. First (171:C 331), he gives the different methods which men follow in the study of truth. Second (335), he shows which method is the proper one...

In regard to the first he does two things. First, he shows how powerful **custom** is in the study of truth. Second (172:C 333), he makes this clear by an example (“The great force”).

He says, first, that the way in which people are affected by what they hear depends upon the things to which they are accustomed, because such things are more willingly heard and more easily understood. For things spoken of in a manner to which we are accustomed seem to us to be acceptable; and if any things are said to us over and above what we have been accustomed to hear, these do not seem to have the same degree of truth. As a matter of fact they seem less intelligible to us and further removed from reason just because we are not accustomed to them; for it is the things which we are accustomed to hear that we know best of all.

332. Now the reason for this is that things which are customary become natural. Hence a **habit**, which disposes us in a way similar to **nature**, is also acquired by customary activity. And from the fact that someone has some special sort of nature or special kind of habit, he has a definite relationship to one thing or another. But in every kind of cognition there must be a definite relationship between the knower and the object of cognition. Therefore, to the extent that natures and habits differ, there are diverse kinds of cognition. For we see that there are innate first principles in men because of their human nature, and that what is proper to some special virtue appears good to one who has this habit of virtue; and, again, that something appears palatable to the sense of taste because of its disposition. Therefore, since custom produces a habit which is similar to nature, it

follows that what is customary is better known.

333. Here he makes his previous statement clear by giving a concrete case. He says that the **laws** which men pass are positive evidence of the force of custom; for the legendary and childish elements in these laws are more effective in winning assent than is knowledge of the truth. Now the Philosopher is speaking here of the laws **devised by men**, which have as their ultimate end the preservation of the political community. Therefore the men who have established these laws have handed down in them, in keeping with the diversity of peoples and nations involved, certain directives by which human souls might be drawn away from evil and persuaded to do good, although **many** of them, which men had heard from childhood and of which they approved more readily than of what they knew to be true, were empty and **foolish**.

But the law **given by God** directs men to that true happiness to which everything false is opposed. Therefore there is nothing false in the divine law.

334. Here he shows how men as a result of custom use different methods in the study of truth. He says that some men listen to what is said to them only if it is mathematical in character; and this is acceptable to those who have been educated in mathematics because of the habits which they have. Now since custom is like nature, the same thing can also happen to certain men (1) because they are poorly disposed in some respect, e.g., those who have a strong imagination but little intelligence. (2) Then there are others who do not wish to accept anything unless they are given a concrete example, either because they are accustomed to this or because their sensory powers dominate and their intellect is weak. (3) Again, there are some who think that nothing is convincing enough unless a poet or some authority is cited. This is also a result either of custom or of poor judgment, because they cannot decide for themselves whether the conclusion of an argument is certain; and therefore, having no faith in their own judgment, as it were, they require the judgment of some recognized authority. (4) Again there are others who want everything said to them with certitude, i.e., by way of careful rational investigation. This occurs because of the superior intelligence of the one making the judgment and the arguments of the one conducting the investigation, provided that one does not look for certitude where it cannot be had. (5) On the other hand there are some who are annoyed if some matter is investigated in an exact way by means of a careful discussion. This can occur for two reasons. (a) First, they lack the ability to comprehend anything; for since their reasoning power is poor they are unable to understand the order in which premises are related to conclusions. (b) Second, it occurs because of quibbling, i.e., reasoning about the smallest matters, which bears some resemblance to the search for certitude since it leaves nothing undiscussed down to the smallest detail. (c) Then there are some who think that, just as liberality is lacking when the smallest details are taken into account in estimating the fee for a banquet, in a similar way there is a lack of civility and liberality when a man

also wishes to discuss the smallest details in the search for truth.

335. He exposes the **proper method** of investigating the truth. Concerning this he does two things. First (335), he shows how a man can discover the proper method of investigating the truth. Second (336), he explains that the method which is absolutely the best should not be demanded in all matters ("But the exactness of mathematics"). He says, first, that since different men use different methods in the search for truth, one must be trained in the method which the particular sciences must use to investigate their subject. And since it is not easy for a man to undertake two things at once (indeed, so long as he tries to do both he can succeed in neither), it is absurd for a man to try to acquire a science and at the same time to acquire the method proper to that science. This is why a man should learn **logic** before any of the other sciences, because logic considers the general method of procedure in all the other sciences. Moreover, the method appropriate to the particular sciences should be considered at the beginning of these sciences.

336. He shows that the method which is absolutely the best should not be demanded in all the sciences. He says that the "exactness," i.e., the careful and certain demonstrations, found in *mathematics* should not be demanded in the case of all things of which we have science, but only in the case of those things which have no matter; for things that have matter are subject to motion and change, and therefore in their case complete certitude cannot be had. For in the case of these things we do not look for what exists always and of necessity, but only for what exists in the majority of cases.

Now **immaterial** things are most certain by their very nature because they are unchangeable, although they are not certain to us because our intellectual power is weak, as was stated above (279). The separate substances are things of this kind. But while the things with which mathematics deals are abstracted from matter, they do not surpass our understanding; and therefore in their case most certain reasoning is demanded.

Again, because the whole of nature involves matter, this method of most certain reasoning does not belong to *natural philosophy*. However, he says "perhaps" because of the celestial bodies, since they do not have matter in the same sense that lower bodies do.

337. Now since this method of most certain reasoning is not the method proper to *natural science*, therefore in order to know which method is proper to that science we must investigate first what nature is; for in this way we will discover the things which natural philosophy studies. Further, we must investigate "whether it belongs to one science," i.e., to natural philosophy, or to several sciences, to consider all causes and principles; for in this way we will be able to learn which method of demonstration is proper to natural philosophy. He deals with this method in Book II of the *Physics*, as is obvious to anyone who examines it carefully.