

## THE PROEMIA TO LOGIC

A knowledge of its end or purpose is the beginning of understanding logic. The end of logic is to help reason order three of its own acts and thereby perfect them. These three acts can be called understanding what a thing is, understanding the true or the false, and reasoning. These are clearly acts of looking reason whose end is to know or understand, and not acts of practical reason ordered to doing (such as to command and to entreat). These three acts of looking reason can also be distinguished from the acts of reason ordered to knowing how much or how many (such as counting, measuring and calculating). Logic is the tool of the man who wonders what and why.

Thomas Aquinas has written two proemia to logic, one at the beginning of his commentary on the *Peri Hermeneias*, and the second at the beginning of his commentary on the *Posterior Analytics*. Since the second is more complete, we will name it the *major* proemium and the first, the *minor* proemium. Both divide logic by the distinction of three acts of reason begun by Aristotle in the third book *About the Soul*. In both, Thomas distinguishes the books in logic, which have come down to us from the Father of logic, as they correspond to these three acts, but only in the second does he subdivide the books pertaining to the third act

Let us start by looking at the two proemia in my English translation.

### THOMAS AQUINAS: MINOR PROEMIUM TO LOGIC

As the Philosopher says in the third book *On the Soul*, the operation of the understanding is twofold: one which is called the understanding of indivisibles by which the understanding grasps the nature of each thing in itself; and the other is the operation of the understanding putting together and dividing. There is added however a third operation of reasoning by which reason proceeds from the known to an investigation of the unknown.

The first of these operations is ordered to the second because there cannot be a putting together and division except of simples grasped. The second however is ordered to the third because it is necessary that from some known truth to which the understanding assents, one proceeds to getting certitude about something unknown.

Since however Logic is called the science of reason, it is necessary that its consideration be about those things which pertain to the aforesaid three operations of reason.

Aristotle therefore determines in the book of the *Categories* about those things which pertain to the first operation of the understanding; that is, about those things which are conceived by a simple understanding. The Philosopher determines about those things which pertain to the second operation; namely, about affirmative and negative statements in the book called *Peri Hermeneias*. He determines about those things which pertain to the third operation in the book of the *Prior Analytics* and those following it, in which are taken up the syllogism simply and the diverse species of syllogism and argument.

And therefore by the foresaid order of the three operations, the book of the *Categories* is ordered to the book *Peri Hermeneias* which is ordered to the book of the *Prior Analytics* and the following ones.

## THOMAS AQUINAS: MAJOR PROEMIUM TO LOGIC

As Aristotle says in the beginning of the *Metaphysics*, the human race lives by art and reasonings: in which the Philosopher seems to touch upon a certain property of man by which he differs from the other animals. For other animals are led by some natural instinct to their acts; man however is directed by the judgment of reason in his acts. And hence it is that diverse arts serve to perfect human acts easily and orderly. For art seems to be nothing other than a certain ordering by reason of how human acts can arrive at a suitable end through determined means.

Reason however is not only able to direct our lesser parts, but also directs its own act. For this is a property of the understanding part, that it reflects upon itself; for the understanding understands itself, and likewise reason is able to reason about its own act. If therefore from this, that reason reasons about the act of the hand, there has been found the art of building or of metal-working through which man is able to perform acts of these kinds easily and orderly; for the same reason, some art is necessary which directs the act of reason itself, by which man can proceed in the very act of reason orderly, easily and without error.

And this art is Logic, that is rational science, which is rational not only from this that it is according to reason (which is common to all arts), but also from this that it is about the very act of reason as its own matter. And therefore it seems to be the art of arts because it directs us in the act of reason from which all the arts proceed.

It is necessary therefore to take the parts of logic according to the diversity of the acts of reason. There are however three acts of reason of which the first two are of reason according as it is a certain understanding.

One act of understanding is the understanding of the indivisible or incomplex, by which it conceives what a thing is. And this operation is called by some the forming of the understanding or imagination through the understanding. And to this operation of reason is ordered the teaching which Aristotle gives in the book of the *Categories*.

The second operation of understanding is the composition or division of the understanding, in which there is now the true or the false. And for this act of reason serves the teaching which Aristotle gives in the book the *Peri Hermeneias*.

The third act of reason is according to that which is characteristic of reason, namely to go from one thing to another, so that through what is known it might come to a knowledge of the unknown. And the rest of the books of logic serve this act.

It should be noted however that the acts of reason are like, to some extent, the acts of nature. Whence also art imitates nature as far as it can. In the acts of nature, however, there is found a threefold diversity. For in some things nature acts out of necessity, so that it is not able to fail. In some things nature operates for the most part although sometimes it can fall short of its proper act. Whence in these there is necessarily a twofold act: one which is for the most part, as when a perfect animal is generated from a seed; and another when nature falls short of what is suitable to it, as when from seed is generated something defective because of the corruption of some principle.

And these three are also found in the acts of reason. For there is a proceeding of reason bringing in necessity, in which a defect of truth is not possible. And through such a proceeding of reason is acquired the certitude of knowledge. There is however another proceeding of reason in which the true is for the most part concluded, not however having necessity. The third proceeding of reason however is that in which reason departs from the true because of the defect of some principle that should have been observed in reasoning.

The part of logic which serves the first proceeding is called the judging part in that judgment is with the certitude of knowledge; and because there cannot be a judgment about effects except by resolving to first principles, therefore this part is called analytic, that is resolving. The certitude of judgment, however, which is obtained by resolution, is either from the very form of the syllogism only and to this is ordered the book of the *Prior Analytics*, which is about the syllogism simply; or also with this from the matter, because per se and necessary propositions are taken and to this is ordered the book of the *Posterior Analytics*, which is about the demonstrative syllogism.

Another part of logic, which is called the finding part, serves the second proceeding of reason. For finding is not always with certitude. Whence judgment is required about those things which have been found in order that certitude may be had. Moreover, just as in natural things which are done for the most part a certain gradation can be noted (because the stronger the power of nature, the more rarely it fails in its effect), so also in the proceeding of reason which is not with complete certitude, some gradation is found as it approaches more and less to perfect certitude.

For sometimes through a process of this kind, although certain knowledge does not come to be, nevertheless belief or opinion

comes to be because of the probability of the propositions from which it proceeds; for reason wholly inclines to one part of a contradiction although with fear of the other. And to this is ordered the *Topics* or Dialectic for the dialectical syllogism is from probable opinions which Aristotle considers in the book of the *Topics*.

Sometimes belief or opinion does not come to be completely but a suspicion, because reason does not wholly incline to one part of a contradiction although it is more inclined to this part than to that. And to this is ordered the *Rhetoric*.

Sometimes only estimation inclines to some part of a contradiction because of some representation, in the way in which a man comes to detest some food if it is represented to him under the likeness of something detestable. And to this is ordered the *Poetics*; for it belongs to the poet to lead into something virtuous through a suitable representation.

All of these pertain to rational philosophy; for it belongs to reason to lead from one thing of another.

The part of logic which is called Sophistic serves the third proceeding of reason, which Aristotle considers in the book of the *Refutations*.

---

It should be noted that Thomas uses the word *judgment* in speaking of the third act of reason. In many scholastic works on logic, this word is used in describing the second act. Thomas explains why this word is used more in the third act than in the second:

Thomas Aquinas, *De Veritate*, Q. 15, Art. 1, Ad 4:

iudicare non est proprium rationis, per quod ab intellectu distinguere possit, quia etiam intellectus iudicat hoc esse verum, illud falsum.

Sed pro tanto iudicium rationi attribuitur, et comprehensio intelligentiae, quia iudicium in nobis ut communiter fit per resolutionem in principia, simplex autem comprehensio per intellectum.

Thomas Aquinas, *De Veritate*, Q. 15, Art. 1, Ad 4:

To judge is not something private to reason by which it can be distinguished from the understanding because the understanding also judges this to be true and that false.

But judgment is attributed to reason to some extent and grasping to the understanding because judgment in us commonly comes to be by resolution to beginnings, but simple grasping by the understanding.

Thomas casts some further light on the connection and order of these three acts of reason in the following two passages by considering that order in the light of action or motion depending upon some form and upon something immobile:

Thomas Aquinas, *Scriptum Super Lib. III Sententiarum*, Distinctio XXVII, Quaest. I, Art. I, Responsio:

Unumquodque autem agit secundum exigentiam suae formae quae est principium agendi et regula operis.

...Unde...intellectus formatus per quidditates rerum ex hoc dirigitur in cognitione principiorum, quae scitis terminis

cognoscuntur, et ulterius in cognitionibus conclusionum quae notae fiunt ex principiis...

Thomas Aquinas, *Scriptum Super Lib. III Sententiarum*, Distinctio XXVII, Quaest. I, Art. I, Responsio:

Each thing acts according to the requirement of its form which is the origin of its acting and the rule of its work.

Whence the understanding formed by the what-it-is of things is directed from this to a knowledge of the beginnings [premises] which are known when their terms are known, and further to a knowledge of conclusions which become known from the beginnings [premises].

Thomas Aquinas, *Scriptum Super Lib. III Sententiarum*, Distinctio XXVII, Quaest. I, Art. III, Responsio:

In omnibus autem hoc invenitur quod motus procedit a primo immobili quieto. Quod quidem patet in naturalibus; quia primum movens in quolibet genere est non motum illo genere motus, sicut primum alterans est non alteratum.

Similiter patet in intellectualibus; quia motus rationis discurrentis procedit a principiis et quidditatibus rerum, quibus intellectus informatus terminatur.

Thomas Aquinas, *Scriptum Super Lib. III Sententiarum*, Distinctio XXVII, Quaest. I, Art. III, Responsio:

In all things it is found that motion proceeds from a first immobile at rest. This is clear in natural things because the first mover in every genus is not moved by that kind of motion, as the first altering is not altered.



Likewise, it is clear in things of the understanding because the motion of reason discoursing proceeds from beginnings and the what-it-is of things by which the formed understanding is determined.

It is because of the connection and order of these three acts that the direction of all of them reasonably belongs to one science.

Although Thomas has said that these three acts are logic's own matter, it must not be thought that these three acts are the very subjects considered in logic. But before we can see this, we must take up another question: how does reason order its own acts or thinking?

Thomas gives us the beginning of an answer to this question in his Proemium to the *Nicomachean Ethics*, where he divides reason's knowledge by the order it considers. Starting from the connection between reason and order, he distinguishes order in comparison to reason and then divides reason's knowledge by the order it considers. We learn where logic is in this division and that logic is about the order made by reason in our thinking when we order our thoughts and the vocal sounds that signify those thoughts.

## THOMAS AQUINAS, PROEMIUM TO THE NICOMACHEAN ETHICS

As the Philosopher says in the beginning of the *Metaphysics*, it belongs to the wise to order. The reason for this is that wisdom is

the greatest perfection of reason whose property it is to know order. For, although the sense powers know some things absolutely, to know the order of one thing to another belongs only to understanding or reason.

But a twofold order is found in things. One is of the parts of some whole or some multitude to each other, as the parts of a house are ordered to each other. The other is the order of things to their end. And this order is more the chief one than the first. For, as the Philosopher says in the XII book of the *Metaphysics*, the order of the parts of an army to each other is because of the order of the whole army to its leader.

Order however is compared to reason in four ways:

There is an order which reason does not make, but only considers, as is the order of natural things.

There is also an order which reason by considering makes in its own act, as when it orders its thoughts to each other, and the signs of thoughts which are signifying vocal sounds.

There is moreover a third order which reason by considering makes in the acts of the will.

And there is a fourth order which reason by considering makes in exterior things of which it is the cause, such as a box or a house.

And because the consideration of reason is perfected by the firm disposition of knowledge, there are diverse forms of knowledge according to the diverse orders which reason properly considers.

For the consideration of the order of things which human reason considers but does not make belongs to natural philosophy; thus that with natural philosophy, we also include metaphysics.

The order however which reason by considering makes in its own act belongs to rational philosophy which considers the order of the parts of a speech to each other and the order of beginnings to conclusions.

But the order of voluntary acts belongs to the consideration of moral philosophy

And the order which reason by considering makes in exterior things constructed by human reason belongs to the mechanical arts.

---

Thomas points out that reason orders its own thinking *by ordering its own thoughts and the vocal sounds or words which signify those thoughts*.

And in the second reference to logic in the above text, Thomas seems to emphasize that logic is immediately about the order in the speech signifying our thoughts. Indeed, there is evidence that Aristotle's books in logic are about the speeches and names used to order our thoughts and, consequently, our thinking. *Speech* in logic means vocal sound signifying by human agreement, having parts that signify by themselves. (Every speech is composed ultimately of names. A name is vocal sound signifying by human agreement, no part of which signifies by itself.)

But what are the speeches by which reason orders its thoughts and, consequently, its thinking?

In the following passage, Thomas points out the speeches formed in the first two acts of reason:

Thomas Aquinas, *In I Super Ioannem*, Lect 1, n. 25:

Intellectus autem duo format, secundum duas eius operationes. Nam secundum operationem suam, quae dicitur indivisibilium intelligentia, format definitionem; secundum vero operationem suam, qua componit et dividit, format enunciationem, vel aliquid huiusmodi

Thomas Aquinas, *In I Super Ioannem*, Lect 1, n. 25:

The understanding however forms two things by two of its operations. For by its operation which is called the understanding of indivisibles, it forms a definition; by its operation in which it composes and divides, it forms a statement or something of this kind.

Definition of a thing helps reason to understand what that thing is. And in statements, reason understands the true or the false.

Thomas points out, as Aristotle did before him, that truth and falsity are found in the second act and the statement, and not in the first:

Thomas Aquinas, *Scriptum Super Lib. I Sententiarum*, Q. V. Art I, Ad 7:

veritas et falsitas proprie invenitur in secunda operatione, et in signo ejus quod est enuntiatio, et non in primo, vel signo ejus quod est definitio, nisi secundum quid.

Thomas Aquinas, *Scriptum Super Lib. I Sententiarum*, Q. V. Art I, Ad 7:

truth and falsity are properly found in the second operation, and in its sign which is the statement, and not in the first, or its sign which is definition, except in some qualified way.

In another text, Thomas repeats the connection of definition with the first act and statement with the second act and adds the speech corresponding to the third act:

Thomas Aquinas, *Summa Theologiae*, Prima Secundae, q. 90, a. 1, ad 2)

sicut in actibus exterioribus est considerare operationem et operatum, puta aedificationem et aedificatum; ita in operibus rationis est considerare ipsum actum rationis, qui est intelligere et ratiocinari, et aliquid per huiusmodi actum constitutum. Quod quidem in speculativa ratione primo quidem est definitio; secunda, enuntiatio; tertio vero, syllogismus vel argumentatio.

Thomas Aquinas, *Summa Theologiae*, Prima Secundae, q. 90, a. 1, ad 2:

just as in exterior acts one can consider the operation and the work, as the act of building and the built, so also in the works of reason one can consider the act itself of reason which is to understand and to reason and something constituted by an act of this kind; which, in looking reason, first is definition; second statement; and third, syllogism or argument.

But there is another text of Thomas, in which he gives the subjects of logic for the three acts as syllogism, statement and predicate or said of:

Thomas Aquinas, *In I Posteriorum Analyticorum*, Lectio XX, n. 171:

Sciendum tamen est quod alia ratione dialectica est de communibus et logica et philosophia prima. Philosophia enim prima est de communibus, quia eius consideratio est circa ipsas res communes, scilicet circa ens et partes et passiones entis. Et quia circa omnia quae in rebus sunt habet negotiari ratio, logica autem est de operationibus rationis; logica etiam erit de his quae communia sunt omnibus, idest de *intentionibus* rationis, quae ad omnes res se habent. Non autem ita, quod logica sit de ipsis rebus communibus, sicut de subiectis. Considerat enim logica, sicut subiecta, *syllogismum*, *enunciationem*, *praedicatum*, aut aliquid huiusmodi.

Thomas Aquinas, *In I Posteriorum Analyticorum*, Lectio XX, n. 171:

It should be known that for another reason dialectic and logic and first philosophy are about what is common. For first philosophy is about the common because its consideration is about the common things themselves, to wit, about being and the parts and passions of being. And because reason is employed about all that is in things while logic is about the acts of reason; logic also will be about what is common to all things, that is about the intentions of reason, which are related to all things. But not thus that logic is about the common things as subjects. For logic considers as subjects, *syllogism*, *statement*, *predicate*, or something of this kind.

The syllogism is of course the chief subject of the logic of the third act of reason. And the enunciation or statement is the chief subject

of the logic of the second act. But instead of saying *definition* for the first act, Thomas says *predicate or said of*.

Does Thomas think that the subject of the logic of the first act of reason is not definition (as it would seem to be for definition is to the first act as statement and syllogism are to the second and third acts of which they are the subjects)? Or is he merely thinking of the books which have come down to us from the Father of logic where the *Categories* is the only book in the logic of the first act? *Praedicatum*, or what is said of many things, fits the book called the *Categories* and also Porphyry's *Isagoge* or introduction to the *Categories*. And this is reflected in the Latin names for the matter of these two books, one of which is called the *praedicabilia* and the other the *praedicamenta*.

It is difficult to deny the relevance of definition to the first act of reason for it is definition that enables us to understand distinctly what a thing is. And since the name of the defined is a name said of many things (for we define the universal, such as man or square, and not the singular as Socrates or this individual square) and each of the names in the definition is a name said of even more things, the consideration of the predicate which is a name said of many things is ordered to a consideration of definition and the defined.

Although it is surely not wrong to consider definition in the logic of the first act, Aristotle may have thought the consideration of definition in the second book of the *Posterior Analytics* and the help given to defining by the tools of dialectic and the places for all the problems in the books *About Places* (mistranslated often as the *Topics*) was sufficient.

Further, as we said earlier, logic is the tool of the man who wonders what and why. Hence, in some ways the second book of the *Posterior Analytics* is closest to this end. For there Aristotle

considers the questions what and why, how they are both answered fully by a knowledge of causes, the many connections between definition and demonstration by which those questions are answered, and how definitions and demonstrations can be made. Definition is a beginning of syllogism and especially of demonstration.

Moreover, the emphasis on predicate (or what is said of) and therefore on predication (or being said of) is most appropriate to the way logic proceeds. In wisdom, Aristotle sometimes uses logic and natural philosophy to show something. And Thomas contrasts these two ways of proceeding by saying that the logic proceeds *per viam praedicationis* and natural philosophy, *per viam motus*.

Thomas Aquinas, *In VII Metaphysicorum*, Lectio II, nn. 1287-1289:

Attamen diversitatem materiae ab omnibus formis non probat Philosophus per viam motus, quae quidem probatio est per viam naturalis philosophiae, sed per viam praedicationis, quae est propria Logicae, quam in quarto huius dicit affinem esse huic scientiae.

But the Philosopher does not prove the diversity of matter from all forms by way of motion, which proof is by way of natural philosophy, but by the way of being said of, which is appropriate to logic, which he said (in the fourth book) was akin to this science.

This also enables us to separate proceeding in the way belonging to logic from the way of proceeding in wisdom:

Thomas Aquinas, *In VII Metaphysicorum*, Lectio XVII, n. 1658:

Logicus enim considerat modum praedicandi, et non existentiam rei. Unde quicquid respondetur ad quid est, dicit



pertinere ad quod quid est; sive illud sit intrinsecum, ut materia et forma; sive sit extrinsecum, ut agens et finis. Sed Philosophus qui existentiam quaerit rerum, finem vel agentem, cum sint extrinseca, non comprehendit sub quod quid erat esse. Unde si dicamus, domus est aliquid prohibens a frigore et caumate, logice loquendo significatur quod quid erat esse, non autem secundum considerationem Philosophi.

The logician considers the way of being said of, and not the existence of the thing. Whence whatever is answered to the question what is it, is said to pertain to the what it is; whether that is inward, as matter and form, or outward, as the agent or end. But the Philosopher, who seeks the existence of things, does not put the end or agent under what-was-to-be since they are outward. Whence, if we say a house is something to keep out the cold and the hot, speaking logically the what was to be is signified, but not according to the consideration of the Philosopher.

As one goes through logic, one sees how fundamental it is to consider what is said of something and the way it is said of something.

## THE PLACE OF LOGIC IN THE DIVISION OF PHILOSOPHY

Philosophy is sometimes divided into two parts and sometimes into three.

If we divide it into two, it is divided into its two chief parts, which are theoretical or looking philosophy and practical philosophy. Hence, when Lady Wisdom appears to Boethius in the *Consolation of*

*Philosophy*, she has on her dress the Greek letters naming these two parts. These differ by their end. The end of looking philosophy, as its name indicates, is to see or understand. And the end of practical philosophy, as its name also indicates, is to do well. This is like the use we make of our eyes, sometimes just to see something beautiful, and at other times, to do something like walking or driving.

But sometimes philosophy is divided into three parts where we add to the two chief parts, a third part which is the *tool* of philosophy. Logic is a tool for acquiring philosophy rather than a chief or principal part of philosophy.

But if we divide philosophy into only two parts (looking and practical), logic would be more reduced to looking philosophy, as Thomas explains in this text:

Thomas Aquinas, *In Boetii de Trinitate*, Lectio II, Q. I, Art. 1, Ad 2:

...scientiae speculativae, ut patet in principio *Metaphysicorum*, sunt de illis quorum cognitio quaeritur propter seipsa. Res autem de quibus est logica, non quaeruntur ad cognoscendum propter seipsas, sed ut adminiculum quoddam ad alias scientias. Et ideo logica non continetur sub philosophia speculativa quasi principalis pars, sed sicut quoddam reductum ad eam, prout ministrat speculationi sua instrumenta, scilicet syllogismos et definitiones et alia huiusmodi, quibus in speculativis scientiis indigemus. Unde secundum Boetium in *Comment. super Porphyrium* (L. 1, cap. 3) non tam est scientia quam scientiae instrumentum.

[adminiculum: I a prop, a support, *the pole on which the vine is trained* | Transf. aid help]

Thomas Aquinas, *In Boetii de Trinitate*, Lect. II, q. 1, a. 1, ad 2:

Looking sciences, as is clear in the beginning of the *Metaphysics*, are about things the knowledge of which is sought for its own sake. The things however which logic is about, are not sought to be known for themselves, but as a help to the other sciences. And therefore logic is not contained under looking philosophy as a principal part, but as something reduced to it; insofar as it provides looking with its tools, namely syllogisms and definitions and others of this kind which we need in the looking sciences. Whence according to Boethius in his *Commentary on Porphyry*, it is not so much a science as the tool of science.

Sometimes logic is placed among the liberal arts and in this consideration we can also see its connection more with looking philosophy than practical philosophy.

The distinction of the seven liberal arts into the quadrivium and the trivium goes back to Pythagoras (who divided the four mathematical sciences of the quadrivium) and Plato (who was distinguishing the trivium). The distinction of the seven and their place in education was formalized in the Middle Ages (hence, their Latin names). In the following text, Thomas explains why they are called liberal arts and their place and that of logic in particular at the beginning of philosophy.

Thomas Aquinas, *In Boetii de Trinitate*, Lect. II, q. 1, a. 1, ad 3:

Ad tertium dicendum quod septem liberales artes non sufficienter dividunt philosophiam theoreticam, sed ideo, ut dicit Hugo de Sancto Victore in III sui Didascalicon, praetermissis quibusdam aliis septem connumerantur, quia his primum erudiebantur, qui philosophiam discere volebant, et ideo distinguuntur in trivium et quadrivium, eo quod his quasi

quibusdam viis vivax animus ad secreta philosophiae introeat. Et hoc etiam consonat verbis Philosophi qui dicit in II Metaphysicae quod modus scientiae debet quaeri ante scientias; et Commentator ibidem dicit quod logicam, quae docet modum omnium scientiarum, debet quis addiscere ante omnes alias scientias, ad quam pertinet trivium. Dicit etiam in VI Ethicorum quod mathematica potest sciri a pueris, non autem physica, quae experimentum requirit. Et sic datur intelligi quod post logicam consequenter debet mathematica addisci, ad quam pertinet quadrivium; et ita his quasi quibusdam viis praeparatur animus ad alias philosophicas disciplinas.

Vel ideo hae inter ceteras scientias artes dicuntur, quia non solum habent cognitionem, sed opus aliquod, quod est immediate ipsius rationis, ut constructionem syllogismi vel orationem formare, numerare, mensurare, melodias formare et cursus siderum computare. Aliae vero scientiae vel non habent opus, sed cognitionem tantum, sicut scientia divina et naturalis; unde nomen artis habere non possunt, cum ars dicatur ratio factiva, ut dicitur in VI Metaphysicae. Vel habent opus corporale, sicut medicina, alchimia et aliae huiusmodi. Unde non possunt dici artes liberales, quia sunt hominis huiusmodi actus ex parte illa, qua non est liber, scilicet ex parte corporis.

Thomas Aquinas, *In Boetii de Trinitate*, Lect. II, q. 1, a. 1, ad 3:

To the third it should be said that the seven liberal arts do not sufficiently divide looking philosophy, but rather, as Hugo of St. Victor says in the third book of his *Didascalicon*, seven are numbered (setting aside some others) because those who wish to learn philosophy are first instructed in these, and therefore they are distinguished into the trivium and the quadrivium, in that through these as by certain roads the lively soul enters into the secrets of philosophy. And this also fits with the words

of the Philosopher who says in the second book of the *Metaphysics* that the mode of science ought to be sought before the sciences; and the Commentator there says that one ought to learn logic that teaches the common mode of all the sciences and to which pertains the trivium, before all the other sciences. And he [Aristotle] says also in the sixth book of the *Ethics* that mathematics is able to be known by boys. But not natural science which requires experience. And thus is given to be understood that after logic one ought to learn mathematics to which pertains the quadrivium; and thus by these as by certain roads the soul is prepared for the other philosophic disciplines.

Or rather, these among the other sciences, are called arts, because they not only have knowledge, but some work that is immediately of reason itself, as the construction of a syllogism or to form a speech, to number, to measure, to form melodies, and to compute the course of the stars. But other sciences either do not have a work but knowledge only, as divine and natural science (whence they cannot have the name of art since art is called making reason, as is said in the *N. Ethics*, VI.) or they have a bodily work, as medicine, chemistry and others of this kind. Whence they cannot be called *liberal* arts, because acts of this kind belong to man by that part in which he is not free, namely the bodily part.