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ALBERT THE GREAT AND THE HIERARCHY OF SCIENCES

Mark D. Jordan

The paper follows Albert through three of his discussions of the hierarchy of sciences. The first discussion presents what seems a straightforward account of Aristotle's trichotomy of speculative sciences. It remains unsatisfying so far as it exacerbates tensions latent in Aristotle. In the second discussion, Albert attempts to resolve these tensions by supplying a narrative of the mind's ascent along the hierarchy. But the narrative fails to describe convincingly the power by which the mind is rendered capable of ascending. The description is provided finally by the third discussion. In it, Albert identifies the topmost science as rhetorical theology that wants to persuade its students to advance towards God in faith. By completing the narrative in this way, Albert suggests that any adequate discussion of the hierarchy of sciences will not be a contextless description, but a rhetorically situated exhortation.

The topic of the "hierarchy of the sciences" is a knot of teachings and questions handed down to medieval Latin philosophy by various ancient and patristic texts.¹ For modern readers, the knot is tied most obviously by Plato in *Republic* 6 and 7. There the Platonic Socrates considers together the soul's powers, their objects, languages for describing them, their conversion by philosophy, and their perfection in the education of future rulers. The *Republic* was not available to medieval Latin readers, of course. They had to learn of the topic from Plato's successors. Early medieval readers could discover one succession in Boethius on Aristotle, but others were available in Augustine's retelling of Stoic and neo-Platonic philosophy, in Seneca and Cicero, in the encyclopedias of Martianus Capella and Isidore, and in the mystagogical treatises of Ps-Dionysius. By the thirteenth century, there were added to these texts not only Aristotle's several accounts of the hierarchy, but variations on them and on Plato by Alfarabi, Avicenna, and Averroes.

The Platonic knot of teachings and questions is handed to an author like Albert the Great, then, loosened in some parts and tightened in others. It had been loosened so far as the Aristotelian tradition succeeded in extracting issues for discussion and in providing a technical vocabulary for them. Albert did not need to approach the topic unaided. But the knot had been tightened so far as Christian and then Islamic authors extended the hierarchy of sciences to include theologies derived from revelation. The questions and teachings

surrounding the hierarchy of sciences became the privileged topic for reflecting on the relation of Christian theology to philosophy understood as the best of human learning.

It is worth hearing Albert's reflections on the topic for several reasons. First, he was at once the boldest and most assiduous Latin commentator on Aristotle of the thirteenth century—a century not lacking in thoughtful commentators. Second, Albert was justly renowned among his contemporaries for having mastered so many sciences.² If anyone had traversed the hierarchy in its details, he had. Finally, Albert understood himself to be first and last a Dominican teacher of theology. Thus his interest in the hierarchy of sciences, whatever else it might be, is certainly evangelical. If nothing else, the public conditions of Albert's authorship require that he address the role of revealed theology among the other sciences. What better author, then, in whom to try to untie some of the doctrines and questions?

Albert discusses the hierarchy of the sciences most directly and most consecutively in his paraphrases of Aristotle. He also treats of it in other passages, of course. Some appear predictably, say as attached to passages on knowledge in commentaries on the Dionysian corpus.³ Other appearances are more surprising. Albert not only mastered the digression as a teaching device, he had a theory to justify its use.⁴ A complete list of Albert's scattered remarks on the hierarchy of sciences would be difficult both to compile and to exploit intelligently. I have chosen instead to concentrate on three texts, which together span more than two decades of Albert's thinking. I begin with the paraphrase of the *Physics* (just before 1250), move next to the short treatise *On the Intellect and the Intelligible* (between 1254-1257 and 1260), and conclude with the *Summa theologiae* (finished after 1274). My argument will be that the three texts not only take up different threads of the topic, but that they show Albert making progress in appreciating how tangled they are.

Some preliminary cautions need to be noted before reading the first texts, the two Aristotelian paraphrases. The paraphrases enact a single project, to make all the parts of philosophy intelligible to the Latins.⁵ The chronology of the paraphrases has been fairly well worked out by Weisheipl,⁶ but their relation to the rest of Albert's corpus has not. At several points in the text, Albert disclaims the teaching of the paraphrases. They are to be read, he insists, not as expressions of his own mind, but as expositions of the sense of Aristotle.⁷ Yet the paraphrases range widely in their choice of topics and interlocutors, and Albert frequently interrupts the plain reading of Aristotle to indulge controversy or to offer erudition.

The contrast with Aquinas's "commentaries" on Aristotle is striking. While Aquinas enters no explicit disclaimers, he does in fact restrict himself to the Aristotelian text and so rarely speaks in his own voice. It is a rule for the careful reading of Thomas, then, that passages from expositions cannot be

mixed indiscriminately with passages from works written in his own voice. Is the same rule to be applied to Albert's paraphrases? I think not. What the Albertine paraphrases have to say on the hierarchy of sciences is clearly intended to be more than a simple reading of Aristotle. The paraphrases want to remake an idealized Aristotelian corpus into a comprehensive presentation of philosophy. Albert promises as much in the *Physics* and then fulfills the promise abundantly, especially in a treatise like *On the Intellect*.

1. *Orders of Abstraction and Learning*

The opening treatise of Albert's paraphrase of the *Physics* is a prologue to the study of Aristotelian science. It begins by enunciating Aristotle's division of speculative knowledge into metaphysics, mathematics, and physics.⁸ First in the order of nature is metaphysics or "theology," the universal science that treats being (*ens*) so far as it is being, conceived entirely without motion or sensible matter. Next comes mathematics, which conceives its objects "with motion and sensible matter according to [their] manner of existing (*esse*), but not according to the account (*ratio*) [to be given of them]."⁹ The lowest science is physics, which conceives its objects with motion and sensible matter both according to their manner of existing and according to the account given of them. As preliminary examples of objects appropriate to the three sciences, Albert mentions substance for metaphysics, a Euclidean circle or line for mathematics, and the heavens, an element, or something compounded out of elements for physics. For the last, he adds a distinction between physical and logical definitions. Natural things must be defined in physics by reference to sensible matter and a concrete subject; a definition merely in terms of common notions of genus and difference, understood as simple and universal, would belong to logic. They are useless to physics.¹⁰

Once he has set out the basic scheme of the trichotomy of sciences, Albert begins to augment it.¹¹ He augments it first by glossing the objects of the three sciences. Thus metaphysics treats only the intelligible; mathematics, the intelligible and imaginable; physics, the intelligible, imaginable, and sensible.¹² Again, each of the sciences corresponds to an understanding of body.¹³ Metaphysics considers body simply and without qualification, retracing it to being. Mathematics considers "intelligible matter" or "imaginable quantity" according to the various figures found in it.¹⁴ Physics or natural philosophy as such considers natural body universally, while its branches take up one or another kind of physical body. The sub-division of physics makes clear that it is a "general" science, that is, a group or cluster of particular sciences. So too is mathematics. Metaphysics is the universal science, but for that very reason cannot be sub-divided into fields.

Albert augments the trichotomy of sciences more interestingly by drawing out its implications for teaching or inquiry. He begins by remarking that the

objects of metaphysics are the causes of the objects of mathematics and physics. Thus the principles of mathematics and physics can be borrowed from metaphysics, where they are "tested" or "proved" (*probata*).¹⁵ But he immediately substitutes a model in terms of whole and parts: metaphysics is the universal science, while the other two are more restricted sciences that treat "parts" of being. Only metaphysics can be concerned to demonstrate principles properly from a universal grasp of being.¹⁶ The logician can also seek to establish some version of them by proceeding from the common argumentative principles of all sciences. Here as elsewhere, the verbal universality of logic mirrors the real universality of metaphysics.¹⁷ Logic also teaches that true science proceeds demonstratively from first principles to proximate principles. Any other procedure is topical, that is, dialectical or rhetorical.¹⁸

Still, the downward flow of causes and principles in the hierarchy must be reversed so far as human learning is concerned. Our teaching must begin with what is easier, and what is easier for us is what lies near at hand. Good teaching begins from what can be grasped most immediately by sense, imagination, or intellect. Moreover, instruction in physics must begin with acquiring certain principles useful in arguing more particular conclusions. Hence Albert construes the ancient half-title of the *Physics*, *apo phonês* or *ex auditu*, to mean that the principles given in the book are had rather by hearing than by demonstration.¹⁹

The precept to begin teaching near at hand leads Albert quickly enough to more interesting inversions of the hierarchy and to more difficult questions about the interdependence of the sciences. He reads in the Aristotelian text that every science is concerned with principles, causes, and elements.²⁰ He then argues that it is only in physics that one can learn principles, causes, and elements fully and as such. Even though metaphysics considers all of the causes, it treats form and matter not as constitutive of things, but as reducible to the understanding of substance.²¹ How can it be that something necessary to all scientific demonstration is learned fully only in physics? Albert replies first by saying that principles and causes are known sufficiently in each science for it to proceed. He then offers an alternate argument that begins by distinguishing prior axioms (*dignitates*) from proximate ones.

Sometimes demonstration proceeds from what are first and true, and these are principles (*principia*). Sometimes however [it proceeds] from what are taken on faith (*fides*) from what are first and true, which [things] however are not proximate. And sometimes [it proceeds] by what are last and essential (*essentialia*). Therefore what are first and true are the principles. And what are from the first and true, and accepted further in order to infer other things, are the causes: since propositions are the cause of the conclusion. And the elements are proximate, [and] they are required to prove nothing further.²²

Albert fails to draw out this explication at any length, preferring to argue that

not every science must proceed from principles, causes, and elements in the same way. But the explication would seem to suggest that the higher sciences can borrow the pedagogy of causes from physics on "faith," that is, as something already learned.

Yet in physics too there is a difference between the order of nature and the order of our learning. We begin from a confused apprehension of the most common things. This apprehension must be analyzed or "divided" in order for us to discover the special efficient causes and the particular elements of natural objects.²³ Albert gives two examples. We know the whole circle that is to be defined before we know the parts of its Euclidean definition. Again, a child begins by calling all men "father" and all women "mother," and only then discerns the particular man who is father and the particular woman who is mother.

Human learning moves through the physical world in much the same way—and so very differently from the demonstrative deductions of metaphysics and mathematics or even the causal order of nature itself. Albert first distinguishes three, cumulative stages of sense awareness: the apprehension (*acceptio*) of a particular sense, the apprehension of the common sense power, and the apprehension of what he calls "a certain cognition of confused reason."²⁴ It is the latter that allows the child to know that his father is this male, rather than an ass. But before the child can know that this male is father, she must know that some male is father, and even earlier that a human being can be a father.²⁵ In other words, the child must begin by apprehending what Albert calls an indefinite individual (*individuum vagum*) within a universal genus. The child starts as it were with the highest genus, substance, and then works downwards through the Porphyrian tree until the indefiniteness is resolved into a very specific individual (*individuum signatum*). Albert repeats Avicenna's example of recognizing someone at a distance: We first see something (substance), then something moving (animal), then something erect (human being), and finally something with particular properties (Socrates). Albert takes this account not only as psychologically plausible, but as reflecting the development of brain physiology. Moreover, and more remarkably for Albert, this process of composition, which moves from an indistinct simple thing to a distinct composite thing, is proper to physics and to no other science.

At the end of the prologue to Aristotelian science, then, Albert's account of the hierarchy seems to be pulled in several different directions. First, it has become clear that the order of abstraction is the reverse of the order of human discovery. We discover by moving from vague abstractions to definite particulars. Moreover, a similar reversal occurs with regard to principles. The Aristotelian trichotomy suggests that the principles of every science will be made secure only at the top of the hierarchy, in metaphysics. But Albert has

argued explicitly that it is only in physics that the central terms of science are learned fully. Again, there seems to be an inversion of the hierarchy in the curious relation between metaphysics and logic. Logic seems to offer a verbal or abstract anticipation of the precepts of metaphysics. Yet logic is preliminary even to physics and so stands at the lowest point of the hierarchy, on the boundary between the liberal arts and philosophy.

There are technical responses to these reversals and inversions. In paraphrasing the *Categories*, for example, Albert explores at some length the questions, whether logic is a distinct study and whether it is a part of philosophy.²⁶ One could also find passages in which the oppositions of abstraction and human discovery are addressed. But technical attempts at reducing the tensions in Albert's account would obscure one of its most interesting lessons. While the Platonic Line is constructed around a narrative of human learning, the Aristotelian trichotomy begins as a division of objects and then proceeds to match them with accomplished bodies of ideal teaching, that is, with demonstrations. Aristotle's notorious silences in regard to the discovery of principles or the intuition of essences carry over into the hierarchy of sciences as omissions of the processes of discovery. When Albert attempts to describe human learning, he can only exacerbate the tensions of the basic Aristotelian account. What he must do instead is to begin with the narrative he wants to tell about the mind's ascent along the hierarchy.

2. Orders of Introspection and Completion

The most original of Albert's treatments of the hierarchy of sciences is *On the Intellect and the Intelligible*. He composed it to fill a gap in the *parva naturalia*, the shorter Aristotelian essays on biological topics. The gap falls textually between *On Sense and What is Sensed* and *On Sleep and Wakefulness*. Albert argues that there can be no discussion of sleep until there has been further study of the intellect beyond what has been said in *On the Soul* 3.²⁷ So he interposes a short treatise in three parts: on the nature of the intellect as such (1.1), on the intelligible as it belongs to intellect (1.2), and on the unity and diversity of the intellect with regard to the intelligibles (1.3). To this treatise Albert then adds a second book, on the natural completion or perfection of the intellectual soul. While the topic of the hierarchy of sciences figures at several points in the first book, the narrative of ascent preoccupies the second.

The Aristotelian trichotomy of sciences appears first towards the end of Book 1, in the exposition of the kinds of intelligibles.²⁸ Albert wants to compare the objects of the three sciences with the limited power of human intellection. Metaphysical or theological objects exceed this power; mathematical objects are most proportioned to it; physical objects fall below it in regard to certainty and firmness because of privation, matter, and motion.²⁹

This gradation of intelligibility is reflected in the sequence of demonstration itself. The principles of demonstration "have much of the light and form of intellect," but conclusions have less of this light and have it only as an effect. Thus the habitual possession of principles is given one name, '*intellectus*', while the possession of conclusions takes another, '*scientia*'. Reasoning (*ratiocinatio*) is the path (*decursus*) of light from principles to conclusions.

Albert appends to this account a gradation of intellects, that is, a ranking of different intellectual powers and states.³⁰ He begins, obviously enough, with the possible and active intellects of *On the Soul* 3. Next comes the formal intellect, which arises when intellectual light produces a form in the soul. Formal intellect is divided first into practical and speculative. It is next divided, more importantly, into simple and composite. Simple formal intellect is "an intelligence of non-complex things." Composite formal intellect is "an intelligence of complex things" compounded by enunciation, syllogism, or another form of argument. Composite formal intellect is further divided into an inborn intellect of principles and an "accomplished" intellect (*intellectus adeptus*) acquired by discovery or study.

Now this schema of intellectual powers and states foreshadows the structure of Book 2. Albert expands the schema there by inserting the "effected" or actualized intellect between the intellect of principles and the accomplished intellect, then by adding an assimilative intellect at the end of the list. The effected intellect (*intellectus in effectu*) is intellect actualized by an abstracted form that has been illuminated by the agent intellect.³¹ The assimilative or assimilating intellect "is that in which a human being, so far as is possible or permitted to him, rises proportionately to the divine intellect."³² Thus the complete hierarchy of intellects is given by Albert as possible, agent, formal (or of principles), effected, accomplished, and assimilative or divine.³³

This hierarchy of intellects was known to Albert from several sources, none of which he took over unmodified. Let me mention two. Alfarabi's brief *On the Intellect and the Intellected* describes a sequence of five intellects: in potency, in effect, accomplished, agent, and divine.³⁴ The agent intellect appears at the end of the list because it is, for Alfarabi, a separate form, the cause of other intellects, and the giver of forms to bodies. It stands one step below the divine. Albert could hardly accept such a description, and so he changes both the agent intellect's position in the hierarchy and its attributes. Consider, as a second source, Avicenna's *On the Soul* 5.6. The sequence of intellects is less orderly here, but one does read of a material intellect, an intellect in effect, an agent intellect, and an accomplished intellect.³⁵ Avicenna adds to these what he calls "holy intellect," which is the preeminent virtue of prophecy.³⁶ Albert too will speak of a holy mind, but will do so as something known to philosophy.

Whatever its sources, what is to be learned from this hierarchy? It serves

to show several things. First, most simply, Albert can diagnose by it what is needed for different kinds of minds.³⁷ Some minds are naturally more attached to imagination and sense; they are incapable of learning except by sensible examples. They cannot attain to metaphysics. A second or middle mind is helped towards understanding by prophetic or divine teaching. A third kind of mind is born to understand things by itself or with only slight teaching. This is the philosophic mind, also the mind of the prophet.

Still, second, the hierarchy of intellects permits Albert to explain something of how human learning is fulfilled in a glimpse of the divine. It is important to be careful here. Albert emphasizes at the beginning of the second book that he intends to speak about the degrees by which the intellect rises to completion, not about its last and highest happiness.³⁸ The whole discussion takes place within the ambit of philosophy, not of Christian theology. Yet it describes the highest condition of assimilative intellect not only as a vision of the divine, but as a kind of cleansed holiness.

Albert first characterizes assimilative intellect as an ascent to the highest cause of intelligences and intelligibility. The ascent is possible because the divine light has made itself manifest at four lower levels of apprehension.³⁹ It reaches down first to the essential differences of each thing, making them manifest to lower powers. It is, second, the light in which intelligible forms have the being of abstraction or separation for the possible intellect, which is its image (*imago*). The third manifestation is that in which there appear universally in the agent intellect truths that come from the light of the inner microcosm (*minor mundus*). The divine light is joined to the agent intellect not as light to darkness or privation or potency, but as one light to another, if inferior light, which it strengthens and beautifies. The fourth illumination, the last, is what is manifest in the application of divine light to the intelligences that move the celestial spheres.

Now this account of how the divine mind discloses itself along the steps of the hierarchy makes clear one thing that was not clear in the Aristotelian trichotomy. Progress up the levels of intelligibility is progress in self-knowledge. Albert has already stressed that the human mind is an image of the divine mind, and then drawn the conclusion that our minds' work is to find themselves amid the distraction of bodies.⁴⁰ Albert now prescribes four steps towards self-discovery.⁴¹ They are described both in terms of objects to be thought and in terms of effects on the mind thinking. The mind is freed from flesh, from time and extension, from matter, so that it turns more to the divine and so becomes more itself. Albert's language itself takes on unusual coloring, and he quotes moving passages from Apuleius and Dionysius on the properties of the mind set free.⁴² He is even willing to admit a kind of philosophic prophecy.⁴³ What he insists on, above all, is that ascent along the hierarchy of intellects is the human soul coming into knowledge of itself—of

its descent from the divine, of its role as pedagogue in rationalizing the bodily world, of its own immortality.⁴⁴ The teaching here is not a slip or a simple excess. Albert will say many of the same things near the end of the series of paraphrases in *On the Nature and Origin of the Soul*.⁴⁵

Still the lyrical ending of *On the Intellect*, or the exemplary stories in the later work, cannot dispel doubts that Albert has not been true to his claim that he would speak only of philosophical matters. It is certainly true that Albert has philosophical sources in which contemplations and mystical purifications are discussed. But it is equally true that he cannot appropriate these sources as they stand. For a Christian theologian, the agency of ascent to the divine is not simply a diffuse illumination. It is a gift of grace announced and accomplished through a specific revelation. So what Albert has gained in providing a narrative of ascent, he must now secure by naming the power that makes ascent possible.

3. Orders of Persuasion to Piety

The *Summa theologiae* was certainly the last of Albert's major works to be finished, and the main part of it was probably composed after the Aristotelian paraphrases.⁴⁶ It begins, by well established tradition, with a prologue and disputed questions on theology as science. The prologue follows one of the fixed patterns for an *accessus* or introduction: a Scriptural verse (*prothema*) is dissected phrase by phrase to uncover the outline of a doctrine about revealed theology.⁴⁷ The disputed questions raised by Albert after the prologue are also traditional, though his way of arranging them and subordinating them to one another seems original. Still, and however clichéd the forms of his *Summa*, Albert's teaching in it on the relation of theology to the other sciences is both personal and deliberate. It is also a necessary supplement to the teaching of the Aristotle paraphrases.

The *prothema* for Albert's prologue is Psalm 138, verse 6. He reads it as proclaiming that theology is higher than all the other sciences in six ways: in honor or nobility, in origin, in trustworthiness, in applicability, in demonstrative force, and in the infinity of its object.⁴⁸ Each of the six points is explicated by reference to philosophical teaching and to Scripture. So, for the first point, Albert reminds the reader of Aristotle's remarks in *On the Soul* about the wondrousness of knowing about soul. Theology is more wonderful, more honorable, and more noble. On the second point, again, Albert juxtaposes Alfarabi with Scripture and Augustine to argue that only theology seals the soul with divinity itself.

What is more striking, Albert uses the third heading to assert that theology is the only true science.⁴⁹ He argues that even if the other sciences deal with immobile intelligibilities, they still learn of them by reflecting on moving creatures. Only theology is grounded in the eternal *rationes*, completely removed

from motion. Thus only theology completely or chiefly fulfills the requirement that science be a stable knowledge drawn from intelligible things. Indeed, theology is appropriately said to be God's science in each of the four orders of causality. God is the formal cause of every knowable and knower, and God is the efficient cause of theology by the action of the Holy Spirit. Again, God is the subject-matter with which the science is concerned. Finally, most importantly, God is the end towards which theology aims. It follows that theology is most truly wisdom because it is desired for its own sake without qualification.

The claim that the science of the divine is the goal of knowing is reiterated under the fourth heading,⁵⁰ but it receives its most important exposition in the questions of the treatise that follow the prologue. In the treatise Albert resolves a number of difficulties about the scientific character of theology by explaining that it is "a science according to piety (*scientia secundum pietatem*)."⁵¹ The phrase is a variation on the Vulgate of Titus 1:1, "according to...the apprehension of truth which is according to piety (*secundum...agnitionem veritatis quae secundum pietatem est*)."⁵² Albert invokes the phrase to describe a knowledge that instructs faith in the merit of certain deeds. This explicitly rhetorical knowledge wants to persuade its students to love what they should do. It undertakes to persuade by narrating particular events and showing the actions of particular persons.⁵² It does so because its unrestricted audience contains many who can learn only by means of particulars, which function for them as "universals in potency."⁵³

In saying this much, Albert has not by any means exhausted the phrase from Titus. Indeed, he gives it central importance in the treatise by connecting it to two other doctrines. The first of these doctrines is Augustine's division of things into what signifies (*signum*), what is to be used (*uti*), what is to be enjoyed (*frui*), and what both uses and enjoys.⁵⁴ Albert extracts from this division the teaching that theology is a unified and separate science just so far as it attends to signs and other useful things as means to the enjoyable.⁵⁵ The second doctrine invoked by Albert asserts that the manner of theology, as exemplified in Scripture, ought to be multiply persuasive. Theology must then employ, not only the styles of affective rhetoric,⁵⁶ but even the devices of the poets.⁵⁷ Thus Albert draws out from the Pauline phrase a description of theology as a hortatory knowledge of what can lead to salvation, that is, to the enjoyment of God.

The two doctrines are properly joined for Albert because he holds that any responsible teaching about our highest end would have to try to move us towards it. He has in mind Aristotelian notions about the obligations of ethical discourse. So Albert notices Aristotle's concern for the limits on persuasion by mere argument for many hearers.⁵⁸ They must be taught, not by arguments, but by love or coercion. Indeed, because virtue is difficult for us, we need as many inducements to it as we can find, whether they are coercive or instruc-

tive.⁵⁹ But Albert's tenet about the persuasive character of theology also derives, and more importantly, from the view that all knowledge, speculative or practical, is ordered to human fulfillment in the vision of God.

The best known source for this view is Ps-Dionysius, who figures prominently in the first treatise of the *Summa*. Albert relies particularly on the Dionysian assertion that the poetic devices of Scripture are so many "coverings" (*integumenta*) or "veils" (*velamina*).⁶⁰ But Albert knows well that the assertion reaches beyond the text of Scripture to describe every creature and every science about creatures. Human sciences lead their learners by the hand through progressively less material images until they are able to contemplate what is immaterial.⁶¹ The language of Scripture—which is to say, the manner of theology—recapitulates the pedagogy of the whole hierarchy of sciences. The artful persuasions used in theology make explicit the teleology that underlies the Aristotelian trichotomy of speculative sciences. The Aristotelian trichotomy turns out, once again, to be a small and somewhat misleading segment of a much larger and more various hierarchy crowned by Scripture.

Albert makes his revaluation clear in a remarkable passage at the end of his discussion of theology. The passage is in the form of an objection, the body of which Albert both confirms and then underscores.⁶² The objection narrates a sequence of motives that takes human learners through the arts and sciences. It supplies, as it were, the narrative of motive missing from Aristotle. The motives are all of them needs. Physical needs drive us to discover mechanical arts. The needs of the soul seek first for sciences of speech and logic as aids in further learning. Then they turn to physical bodies and their properties. But no knowledge of these can be had without knowledge of quantity and figure, so that the soul is driven to seek a mathematics. Yet the principles of mathematics are not to be found within it. They can only be had in a higher science, which the philosophers call first philosophy or theology.

The objection wants to draw from the narrative a conclusion that the highest science cannot have any end at all, else it would be for the sake of something further and so subservient. Albert replies that there are internal ends and external ends. The external end of theology is in the person knowing it. The internal end is carried within the science itself. Thus theology is indeed, as the objection argued, the only free science. It is sought for its own sake. It is quite properly called 'wisdom', and it holds dominion and power over the other sciences. Their variety is required by the multiple weaknesses of human understanding, which needs a graded pedagogy in order to make progress towards apprehension of the simplicity of divine truth. Thus the hierarchy of sciences seems, from the vantage of theology, another instance of God's condescension. God reaches down by giving grace. The philosophers may be said to have a kind of "revelation" though the intellect's connatural light, but the actual contemplation of what is above requires the gracious giving of

another light, which is here anticipated only by faith.⁶³ Without grace, the motives of human inquiring would be cruelly unfulfilled.

4. *Albert's Descriptions of the Orders*

The three texts are important texts for understanding Albert on the hierarchy of sciences, but they are no more than that. Certainly there are other important texts, and certainly it would be possible to construct other progressions in Albert's teaching. My point has not been to engage in unprovable intellectual biography. I have wanted rather to illustrate how Albert responds to characteristic tensions in the Aristotelian trichotomy of sciences. He responds, I think, by supplying the missing narrative of the soul's ascent through the trichotomy and then explaining the narrative theologically. But I myself have omitted one feature of Albert's responses. I will end by retrieving it and by suggesting that it points to a further range of tensions and difficulties.

In the last two texts discussed here, Albert includes in the narrative of ascent a requirement that the language of teaching become more negative as one moves higher. So, in *On the Intellect*, Albert quotes philosophical authorities in support of the assertion that the divine light "has no name and cannot be told of."⁶⁴ In the *Summa*, Albert lays out the whole Dionysian teaching about negative theology. To recognize that language fails more and more as one ascends adds another reversal to the account of the hierarchy. The most intelligible in itself is hardest for us to learn and impossible for us to describe except by negation. But the insistence on negation must also raise serious questions about descriptions of the hierarchy or of ascent along it.

The simple way to capture these questions is to ask where Albert is standing when he speaks of the hierarchy. Is he at the bottom, or in the middle, or on top, or alongside? But it can be replied immediately to this formulation of the issue that Albert is not looking at the hierarchy. He is reading distinct, authoritative descriptions of the hierarchy. His first task as *magister* is not to describe what he sees or experiences, but to join together what he and his students read. So the question raised by the requirement of negation for Albert's descriptions must be put more tellingly. Do the restrictions on language in the top of the hierarchy apply equally to descriptions of the top of the hierarchy as such? Again, is a description of the hierarchical position of metaphysics itself subject to the strictures on metaphysical language?

Albert does not explicitly address this or related formulations of the issue. It might seem, moreover, that he proceeds with his description as if he imagined that he possessed some neutral language outside the scientific languages of the various stages of the hierarchy. Indeed, it might be argued that Albert has himself here fallen victim to the confusion about the place of logic. He might be imagining that he can evade the limitations of negative theology by speaking merely as a logician.

Let me suggest that Albert is rather more cunning than this argument allows. I noted at several points that his language becomes heavily charged whenever he describes the ascent to the top of the hierarchy. The pertinent passages of *On the Intellect* are filled with lyrical quotations from potent authorities, and the corresponding parts of other treatises repeat these or tell affecting stories of philosophical seeking. In the *Summa*, the reader is given a doctrine about the rhetorical character of theology. Because theology makes explicit the teleology of the ascent, and because it offers the only sure way of ascending, theological language must be variously persuasive. So too are Albert's remarks on the hierarchy of sciences. He does not offer them as descriptions or explanations or theories, so much as exhortations. So it is he tries from the opening of the *Physics* to convert the Aristotelian trichotomy into a persuasive account of the mind's manners and motives for inquiring. Albert is so quick to supply the missing narrative of ascent because only it can accomplish the kind of persuasion that any responsible presentation of the hierarchy must attempt.

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NOTES

1. Throughout this paper, I use 'science' as a place-holder in English for '*scientia*'. Any more accurate translation—such as 'body of knowledge'—would almost immediately prove itself cumbersome and confusing.

2. This is one point worth retaining from Aniceto Fernández-Alonso, "Scientiae et philosophia secundum S. Albertum Magnum," *Angelicum* 13 (1936):24-59, at p. 25.

3. See, for example, *Super Dionysium De divinis nominibus* 4 (IAM 37:134.31-33). Albert's works will be cited in one of two editions, to be noted as "Borgnet" and "IAM." "Borgnet" refers to the *Opera omnia* edited by Auguste Borgnet in 38 volumes (Paris: L. Vivès, 1890-1899). "IAM" refers to the ongoing, critical edition of the *Opera omnia* edited by the members of the Institutum Alberti Magni of Cologne (Münster i. W.: Aschendorff, 1951-). The Borgnet edition will be cited by volume, page, and column; the IAM edition, by volume, page, and line.

4. *Physica* 1.1.1 (Borgnet 3:1b-2a).

5. *Physica* 1.1.1 (Borgnet 3:2a): "nostra intentio est omnes dictas partes [scil. philosophiae] facere Latinis intelligibiles."

6. James A. Weisheipl, "Albert's Works on Natural Science (*libri naturales*) in Probable Chronological Order," Appendix I in Weisheipl ed., *Albertus Magnus and the Sciences: Commemorative Essays, 1980* (Toronto: PIMS, 1980), 565-577.

7. For a list of these passages, and some reflections on their meaning, see James A. Weisheipl, "Albert's Disclaimers in the Aristotelian Paraphrases," *Proceedings of the PMR Conference* 5 (1980):1-27.

8. With 'physics' as with 'science', the reader should always hear the Latin cognate. 'Physics' means in this paper just what '*physica*' means in the Albertine texts discussed.

9. *Physica* 1.1.1 (Borgnet 3:2a).

10. *Physica* 1.1.1 (Borgnet 3:3a).

11. For other rehearsals of the basic trichotomy in the paraphrases, see *Physica* 2.1.8 (Borgnet 3:108-109), *Ethica* (paraphrase) 1.1.4-5, 1.3.1, and 1.4.6 (Borgnet 7:12-13, 31, 55), *Metaphysica* 1.1.1, 1.2.3, 1.2.6-7, 2.1.4, 6.1.1-3, 7.3.5 (Borgnet 6:2-3, 27, 30-32, 119-120, 382-386, 458), *Praedicamenta* 1.1-4 (Borgnet 1:2-6), *Analytica Posteriora* 1.1.2 (Borgnet 2:7), and *Topica* 1.4.2 (Borgnet 2:278). The most extended discussion of any of these texts is in Beroald Thomassen, *Metaphysik als Lebensform: Untersuchungen zur Grundlegung der Metaphysik im Metaphysikkommentar Alberts des Grossen*, BGPTM new series 12 (Münster i. W.: Aschendorff, 1985), especially pp. 134-149. Thomassen also provides the most complete printed bibliography of studies on the topic (pp. 178-182); I will mention only those few that are needed in reading the three texts from Albert.

12. *Physica* 1.1.1 (Borgnet 3:3a-b).

13. *Physica* 1.1.3 (Borgnet 3:7a).

14. *Physica* 1.1.1 (Borgnet 3:2a): "Nihil ergo cadit in ratione mathematicorum de materia sensibili, sed potius de materia intelligibili quae est quantitas imaginabilis...."

15. *Physica* 1.1.1 (Borgnet 3:3b).

16. *Physica* 1.1.1 (Borgnet 3:4a). Borgnet's text reads "nullius scientiae particularis disputatio est ad *destruentem* principia," but surely the original verb must be "demonstro" or (less probably) "construo."

17. For further discussion of this 'mirroring,' see Edward Booth, *Aristotelian Aporetic Ontology in Islamic and Christian Thinkers*, Cambridge Studies in Medieval Life & Thought 3rd Series 20 (Cambridge: Cambridge University Press, 1983), pp. 165-180. For a more straightforward survey of Albert's explicit remarks on the nature of logic, see Richard F. Washell, "Logic, Language, and Albert the Great," *Journal of the History of Ideas* 34 (1973):445-450.

18. *Physica* 1.1.5 (Borgnet 3:10b), with the reference to the *Posterior Analytics*.

19. *Physica* 1.1.4 (Borgnet 3:10a).

20. Aristotle, *Physics* 1.1 184a1-2.

21. *Physica* 1.1.5 (Borgnet 3:11a).

22. *Physica* 1.1.5 (Borgnet 3:11a-12b).

23. *Physica* 1.1.6 (Borgnet 3:12b).

24. *Physica* 1.1.6 (Borgnet 3:14b), "acceptio secundum sensum particularem tantum," "acceptio secundum communem simul et particularem," "acceptio secundum sensum particularem et communem et aliquam cognitionem confusae rationis in sensu vel cognitionis, quae loco rationis est."

25. For this and what follows to the end of the paragraph, *Physica* 1.1.6 (Borgnet 3:15a-16a).

26. *Praedicabilia* 1.1.1-2. One can discover—or invent—a range of analogies between the arts of the *trivium* and the trichotomy of sciences, as I did for Aquinas in *Ordering Wisdom* (Notre Dame: University of Notre Dame Press, 1986), pp. 170-179.

27. It may also be that Albert wanted to find a place for the Ps-Aristotelian "letter" that he mentions as his source of Book 1 (Borgnet 9:). Weisheipl seems to think that the letter is the source for the whole, but the context suggests rather that Albert is using the letter as his guide on the question of emanation from the first cause. Compare Weisheipl, "Albert's Works," p. 570, no. 10d.

28. There are other, more familiar formulations of the trichotomy as degrees of abstraction from matter in *De intellectu*, as at 2.6 (Borgnet 9:512a-513b). Because Borgnet's version of the *De intellectu* seems particularly patchy, I have collated it with the manuscript version in Milan, Bibliotheca Ambrosiana H 129 inferior, ff. 10v-20r. But I list corrections only for one crucial passage. See note 39, below.

29. *De intellectu* 1.3.2 (Borgnet 9:500a).

30. *De intellectu* 1.3.3 (Borgnet 9:501a).

31. *De intellectu* 2.6 (Borgnet 9:512a).

32. *De intellectu* 2.9 (Borgnet 9:516a).

33. I combine the parallel lists towards the end of *De intellectu* 2.9 (Borgnet 9:517a, 517b).

34. I follow the Latin version available in *Opera omnia quae latina lingua conscripta reperiri potuerunt*, ed. G. Camerarius (Paris, 1638; rptd. Frankfurt a. M.: Minerva, 1969). See respectively pp. 48-49, 49-53, 53-54, 56-62, and 63-64.

35. Avicenna, *Liber de anima seu sextus de naturalibus*, ed. S. Van Riet (Louvain: Editions Orientalistes, and Leiden: E. J. Brill, 1968), pp. 134-153. The *intellectus adeptus* and the *intellectus in effectus* are juxtaposed at 150.65-67.

36. Avicenna, *Liber de anima* 5.6 (Van Riet 151.84-85 and 153.15-17).

37. *De intellectu* 1.3.3 (Borgnet 9:501b).

38. *De intellectu* 2.1 (Borgnet 9:503a-b).

39. *De intellectu* 2.9 (Borgnet 9:516b). In 516b, lines 2-26, I make the following significant corrections from the manuscript (fols. 19ra-rb): for *inferiorum*, *inferioris*; for *in ordine minoris mundi*, *ex lumine minoris mundi*; for *et limpidius ea ponens*, *in limpidius efficitur agens limpidior et luculentior et (?) abstrahens et*; for *ampliatione*, *applicatione*.

40. *De intellectu* 2.8 (Borgnet 9:515a), with the references to Plato and Alfarabi.

41. *De intellectu* 2.10 (Borgnet 9:518a-b).

42. *De intellectu* 2.10 for Apuleius, 2.11 for Dionysius (respectively Borgnet 9:518b and 519b).

43. *De intellectu* 2.11 (Borgnet 9:520a).

44. *De intellectu* 2.12 (Borgnet 9:520b).

45. *De natura at origine animae* 20.2.13 (IAM 5).

46. On the authenticity and dating of the *Summa theologiae*, see the editors' remarks in the *Opera omnia*, IAM 34:v-xvi; and Simon Tugwell, ed., *Albert and Thomas: Selected Writings* (New York: Paulist Press, 1988), p. 113, n. 231.

47. For a survey of some *accessus* patterns, see now A. J. Minnis and A. B. Scott, *Medieval Literary Theory and Criticism, c. 1100-c. 1375: The Commentary-Tradition* (Oxford: Clarendon Press, 1988), pp. 12-36.

48. *Summa theologiae* 1.prologue (IAM 34:1.5-17).

49. *Summa theologiae* 1.prologue (IAM 34:2.25-26): "planum est hanc vel solam vel praecipuam esse scientiam."

50. *Summa theologiae* 1.prologue (IAM 34:3.10-11): "haec etiam scientia intellectui nostro maxime est applicabilis, et ideo in ipsa maxime quiescit anima."

51. The phrase first occurs in *Summa theologiae* 1.1.1 ad 1 (IAM 34:6.61), then recurs at 1.1.2 corpus (34:8.47-48), 1.3.3 [objection 3] (34:13.46), and 1.1.5.1 ad 1 (34:16.37-38).

52. *Summa theologiae* 1.1.1 ad 1 (IAM 34:6.62): "informans ad fidem et meritum operum."

53. *Summa theologiae* 1.1.1 ad 1 (IAM 34:7.4-5): "potentia universalis." Albert dismisses as irrelevant an argument for theology's universality based on four senses of "universal" (34:7.11-29).

54. Albert seems to take the distinction from the first chapters of Augustine's *De doctrina Christiana* 1; see especially *Summa theologiae* 1.1.3.1 (IAM 34:9.70-10.20).

55. See, for example, *Summa theologiae* 1.1.3.1 ad 3 (IAM 34:11.25-26), "utile esse significando vel disponendo ad id quo fruendum est;" 1.1.3.2 corpus (34:13.2-3), "in utili quaeritur fruibile et stat sub forma fruibilis;" 1.1.3.3 corpus (34:13.60-61), "verum in re fruibili vel utili;" 1.1.3.4 corpus (34:14.31-32), "per formam analogiae ad id quo fruendum est;" 1.1.4 corpus (34:15.22-23), "subiectum est fruibile vel relatum ad ipsum per modum signi vel utilis;" and 1.1.4 ad 5 (34:15.60), "In ista autem scientia tractantur secundum relationem ad fruibile...."

56. Albert here draws on traditional lists of the *modi* or manners of speech in Scripture. He himself mentions nine *modi*: exemplary, preceptive, revelatory, hymnic, oratorical, parabolic, disputative, admonitory, and hortatory (*Summa theologiae* 1.1.5.4 [objection 13], IAM 34:21.25-41).

57. Albert's language is cautious on this point. He says that theology may use material images "properly according to its own manner as if they were poetic things" ("talibus quasi poeticis utitur proprie secundum suum modum," *Summa theologiae* 1.1.5 ad 2 [IAM 34:17.11-12]). Again, theology "uses poetic things formed and figured by divine wisdom" ("poeticis utitur ex divina sapientia formatis et figuratis," 1.1.5.2 ad 1 [34:18.12-13]). Elsewhere he says simply that is "proceeds poetically" ("poetice procedit," 1.1.5.1 objection 1 [34:16.24]).

58. *Summa theologiae* 1.1.5.4 ad 6 (IAM 34:21.76-79), with reference to *Nicomachean Ethics* 10.9 1179b4-21. Albert may be generalizing Aristotle's point. Aristotle emphasizes a distinction between the few and the many, and Albert too begins his reply by alluding to such a distinction. But it seems to disappear when Albert gets to the limits on persuasion. It seems for Albert that all human beings need to be treated as weak learners by the divine teaching.

59. *Summa theologiae* 1.1.5.4 ad 13 (IAM 34:22.71-86).

60. *Summa theologiae* 1.1.5.1 objection 1 (IAM 34:16.25), "sub integumentis metaphoricis," paraphrasing *Celestial Hierarchy* 2; 1.1.5.1 ad 2 (34:17.3-4), "velaminum circumvalentum," quoting *Celestial Hierarchy* 1.

61. *Summa theologiae* 1.1.5.1 ad 2 (IAM 34:17.22-31), quoting *Celestial Hierarchy* 1. Note especially the phrase “materialis manuductio.”

62. *Summa theologiae* 1.1.6 objection 3 (IAM 34:23.22-49). The source cited is Aristotle, *Metaphysics* 1.2 982b29-30, but Aristotle provides no more than the tag-line that human nature is enslaved in many ways.

63. *Summa theologiae* 1.1.4 ad 3 (IAM 34:15.41-50).

64. *De intellectu* 2.9 (Borgnet 9:517a).