

Chapter III

Abstract Truth in Thomas Aquinas*

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Thomas Aquinas holds that the proper objects of intellect are the natures of material objects, conceived of universally through intellectual abstraction. This paper considers two questions regarding that doctrine: first, what are these abstracted, universal objects and second, given that the world is concrete and particular, how can such abstract, universal thoughts yield true beliefs about the world?

1 Prologue: The Objects of Intellect

A central methodological principle of Aristotelian psychology — perhaps *the* central principle — is that the capacities of the soul must be investigated in terms of what sort of object that capacity has. In the words of Aquinas, ‘the nature of any capacity lies in its relationship to its proper object’ (*InDA*, II.13.69–70). This is most obviously true for the five external senses. There are five external senses, no more and no less, because there are five kinds of sensible qualities that we need to investigate in the world around us.¹ The principle holds equally of the human intellect, or at least it should. But here its application is more problematic, because it is unclear just what the object of intellect is.

Thomas Aquinas holds that the proper objects of the human intellect — that is, those things that the human intellect is naturally suited to understand — are the natures or quiddities of material things in the world around us. As we will see, this claim shapes a great deal of what he has to say about the nature of intellect. Later authors, however, would take very different views. On one account, sometimes attributed to Henry of Ghent, the proper object of the human intellect is God. What Ghent had actually claimed is that God is both the first and the ultimate object of intellect: ‘The beginning and the end of our cognition lies in God himself: the beginning, with respect to the most general cognition of him; the end, with respect to the nude

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1 For the case of Aristotle, see Sorabji (1971). For Aquinas, see *ST*, IIa 78.3. The case of touch is problematic, because it is not clear how the various sensible qualities associated with touch — temperature, texture, etc. — fall into a single kind (see *ST*, Ia 78.3 ad. 3–4).

and particular vision of him' (*Summa*, 24.7c [144rH]). This claim is based on the more familiar idea that the first objects of cognition are the transcendental concepts of being, goodness, truth, etc. In virtue of having these concepts, we understand everything else. These concepts, according to Ghent, are fundamentally ideas of God, and so in that sense we begin with a very general conception of God, and work toward the clear and distinct idea of God obtained by the blessed in heaven.

Aquinas would have accepted Ghent's claims about the primacy of transcendental concepts,² and would also have accepted that God is the ultimate object of intellect. Yet he would have denied that this makes God the proper object of the human intellect. Now it is not obvious that Ghent himself wanted to endorse that further claim, but this is how he would later be read by John Duns Scotus. Scotus stresses that the question of the intellect's proper object is the question of what object the intellect is naturally disposed to apprehend. That which is first, temporally, or even first and last, is not necessarily the *proper* object of intellect. Thus Scotus remarks, 'the first natural object of a capacity has a natural relationship to that capacity' (*Ordinatio*, I.3.1.3, n. 126). Plainly, if this is so in Ghent's view, it is so only with respect to God's most general attributes, the transcendental attributes that apply to all being. But Scotus then reasons: If God is the proper object of intellect only under his general attributes, then it is really those attributes, rather than God, that are the proper objects of intellect. This seems right. In general, when the intellect apprehends the universal attributes of some particular thing, we do not say that the particular thing is the object of intellect. Instead, we think of those attributes themselves as the object of intellect.³

Part of what makes it attractive to identify God as the proper object of the human intellect is that this ties our proper cognitive object into our ultimate (hoped for) cognitive destiny. If the end of human life is to achieve a face-to-face vision of God, then there would seem to be something plausible about thinking of God as what our intellect is naturally suited to apprehend. There is, in the same way, something unsatisfactory about Aquinas's account, inasmuch as the blessed in heaven would seem to be *abandoning* their proper intellectual object – the quiddities of material objects – in favor of something else, God. If that is our ultimate destiny, and if life on earth is just a brief prologue to the eternity of our life to come, then it is hard to understand Aquinas's insistence that the material world is what our intellect is naturally suited to apprehend. Scotus brings this point out quite effectively in arguing against Aquinas's view.

2 See, e.g., *InDH*, 2.9–18 [§20].

3 'Contra istam opinionem arguo sic: primum obiectum naturale alicuius potentiae habet naturalem ordinem ad illam potentiam; Deus non habet naturalem ordinem ad intellectum nostrum sub ratione motivi, nisi forte sub ratione alicuius generalis attributi, sicut ponit illa opinio [Henrici]; ergo non est obiectum primum nisi sub ratione illius attributi, et ita illud attributum generale erit primum obiectum. ... Sed particulare quod non intelligitur nisi in aliquo communi non est primum obiectum intellectus, sed magis illud commune. Ergo etc.' (*Ord.*, I.3.1.3 n. 126).

We identify the first object of a capacity as that which is adequate to it by reason of the capacity, not that which is adequate to the capacity in a certain state – just as the first object of sight is not held to be that which is adequate to sight solely when it is in a medium illuminated by a candle, but that which is naturally suited to be adequate to sight in its own right, with regard to the nature of sight. (*Ord.*, I.3.1.3 n 186)

Trapped in a dark cave, we might see only shades of gray, but that does not make gray the object of sight, even if we spend our entire lives in a cave. So too, Scotus argues, for the human intellect. Even if in this life we have cognitive access only to the material world, that does not mean that material objects are the proper object of intellect.

Scotus therefore proposes an alternative account, that the proper object of the human intellect is being (*ens*). This is to say that there is no one aspect of the world that the intellect, in its own right, is especially suited to apprehend. Everything that exists is a potential object of intellect, and the intellect is equally suited to grasp all of those things, insofar as they are beings.⁴ This might look like a disappointingly bland conclusion, because Scotus is in effect simply denying the whole premise of the discussion, that our intellect has *something* to which it is especially attuned, in the way that each of the senses has its own proper object. But in denying that premise, Scotus is actually making quite a striking claim, that there is nothing intelligible to any intellect that is unintelligible to us. Whatever any mind can know, our minds can know, at least in principle.⁵ (Even God's essence is intelligible, albeit never completely, to the blessed in heaven.) This has the negative methodological implication that there is no special object of the human intellect that can give us a grip on what the nature of our intellect is. But it has the exciting positive implication that our intellect is qualitatively the same in its nature as all other intellects. We may lack the information that angels have, since we are not illuminated by God in the way that they are, and our minds might anyway lack the capacity to grasp such illumination fully. But despite these quantitative differences in how much we know and how smart we are, our minds are fundamentally the same in kind as the minds of God and the angels. I have not found Scotus explicitly saying quite *that*, but this is the view that he would have to take, if he is to abide by the Aristotelian tenet that capacities are distinguished in virtue of their objects.

Here it may begin to seem as if Scotus's view is implausible. In insisting on our intellect's connection to the material world, Aquinas of course has in mind our constant reliance on the senses. Surely it is reasonable to suppose that this constant downward orientation makes for a fundamental difference between our intellects and those intellects that are not attached to any body. Scotus is entirely willing to grant what Aquinas has to say about our intellectual dependence on the senses in this

4 See, esp., *Ord.*, I.3.1.3 n. 137. I discuss Scotus's view in more detail in Pasnau (2003), 293–6. See also Honnefelder (1979), 55–98, and Marrone (2001), vol. 2.

5 'Quod habet in natura sua intellectum possibilem, potest ex natura sua cognoscere quodcunque cognoscibile, hoc est recipere cognitionem eius, quantum est ex parte sui' (*QQ*, 14.6).

life. He accepts that our intellect receives all its information through the senses, and accepts Aquinas's insistence that we must continuously turn back toward phantasms in the course of our thinking. Hence he allows that 'with respect to what moves the intellect, in this state, its first adequate object is the quiddity of a sensible thing' (*Ord.*, I.3.1.3 n. 187). But although this is so *de facto pro statu isto*, it reveals nothing about the intellect's intrinsic nature, because 'it is not so as a result of the intellect's nature, that which makes it an intellect' (*ibid.*).

Both Scotus and Aquinas agree that the nature of intellect should be proportioned to the nature of its proper object.⁶ Yet, according to Scotus, a human intellect separated from the senses would not carry with it any distinguishing features to mark it off as directed by nature at the material world. Aquinas, in contrast, is committed to the idea that there is something intrinsic to intellect that suits it to apprehend material things. It does not just *happen* that intellects like ours are connected to bodies. 'It is natural for us to cognize things that have existence only in individual matter, because our soul, through which we cognize, is the form of one kind of matter' (*ST*, 1a 12.4c). So he concludes that although the natures of material things are not in their own right among the easiest things to grasp, being material, these nevertheless are the things that we are most capable of understanding.⁷

Aquinas's commitment to this characterization of the human intellect runs so deep that even his account of the beatific vision gets explained in these terms. The blessed in heaven, he tells us, will see the divine essence through a purely intellectual vision. But if that kind of experience is the ultimate end of human life, then why shouldn't we agree with Scotus that facts about how the intellect operates in this life are no more significant than facts about how sight operates in a dark room? Aquinas deals with this sort of objection by incorporating his conception of the intellect's proper object into his account of the beatific vision. Why should we suppose that the ultimate happiness for human beings is a vision of the divine essence? Because only such a vision would show us the ultimate causes behind the natural world. Without grasping the divine essence, we can know that certain things are the case, but we can never truly know *why* they are the case. If someone were to lack that ultimate explanation, 'there would still remain for him the natural desire to inquire into the cause. Hence he would not yet be completely happy (*beatius*)' (*ST*, 1a2ae 3.8c).⁸

6 Scotus makes this point by remarking, as quoted earlier, 'primum obiectum naturale alicuius potentiae habet naturalem ordinem ad illam potentiam' (*Ord.*, I.3.1.3, n. 126). For Aquinas, similarly, 'obiectum cognoscibile proportionatur virtuti cognoscitivae' (*ST*, 1a 85.1c).

7 'Nam magis sunt nobis intelligibilia quae sunt sensui proximiora, quae in se sunt minus intelligibilia' (*SCG*, II.77.1584). '[C]um anima humana sit ultima in ordine substantiarum intellectivarum, minime participat de virtute intellectiva; et sicut ipsa quidem secundum naturam est actus corporis, eius autem intellectiva potentia non est actus organi corporalis, ita habet naturalem aptitudinem ad cognoscendum corporalium et sensibilibus veritatem, quae sunt minus cognoscibilia secundum suam naturam propter eorum materialitatem, sed tamen cognosci possunt per abstractionem sensibilibus a phantasmatibus' (*InMet.*, II.1.285).

8 Cf. *ST*, 1a 12.1c, *InMat.*, V.2.434; *InJoh.*, I.11.212; *CT*, I.104.

Complete happiness, Aquinas claims, requires the satisfaction of all desires. That is plausible enough. What is startling is the further implication that, for the human intellect, the beatific vision is beatific because it supplies the means for us to satisfy our true intellectual goal, a thorough understanding of the material world into which we were born.

This is a very odd result. It would be as if, in leaving Plato's cave, we took satisfaction in what we saw under the sun only insofar as that explained what we had been seeing for all those years underground. Surely, however, we would quickly lose interest in facts about the cave. Wouldn't the same be true for the beatific vision? If seeing God's essence is indeed what would make us perfectly happy, surely the reward would not come from what we would learn about the natures of material things. Would learning about the different genera and species of butterflies really make us all that happy, let alone *perfectly* happy? There is a general question here about the heavily intellectual nature of Aquinas's account: his assumption that our perfect happiness consists in our *intellect's* perfect satisfaction.⁹ But even setting that aside, it is hard to see how a perfect grasp of the material world could be so satisfying. (And would it continue to be satisfying even after Judgment Day brings the end of the world as we know it?) Moreover, one might well suppose that the material world would be quite uninteresting in comparison to what we could learn about the nature of God. But the latter, Aquinas insists, is *not* the proper object of the human intellect.

Aquinas might diminish the impact of this criticism by stressing the deep fascination human beings do in fact have with the natural world. For a connoisseur of butterflies, seeing in the divine essence the whole order *Lepidoptera* surely would approach a kind of perfect happiness. And if butterflies leave you cold, that may well be just because you don't know enough about them. The beatific vision would be like a kind of virtual reality in which you could quickly become an expert on anything, and enjoy the same kind of pleasure in that subject that an expert enjoys. Still, one might wonder whether such pleasures would really carry much weight in comparison with what we might come to learn about God. Although I have not found Aquinas addressing this question, he has a natural reply. For he repeatedly stresses that God remains incomprehensible to us, even through the beatific vision.¹⁰ This is not to say that we can know nothing about God, since Aquinas of course thinks we can know some things about God even in this life, and will know more still in heaven. But given his claim that perfect happiness requires the satisfaction of all our desires, and that intellectual desires are satisfied only when we completely

9 See, e.g., *QDV*, 8.1c: 'Constat enim quod cuiuslibet intellectualis creaturae beatitudo consistit in sua perfectissima operatione. Illud autem quod est supremum in qualibet creatura rationali est intellectus. Unde oportet quod beatitudo cuiuslibet creaturae rationalis in nobilissima visione intellectus consistat.'

10 'Omnis autem substantia intellectualis creata est finita: ergo finite cognoscit. Cum ergo Deus sit infinitae virtutis et entitatis, et per consequens infinite cognoscibilis, a nullo intellectu creato cognosci potest quantum est cognoscibilis; et ideo omni intellectui creato remanet incomprehensibilis' (*InJoh.*, I.11.213).

grasp what a thing is, he can hardly hold that God's nature is the principal object of inquiry in heaven. If that were what we were after, we would be doomed to failure, hence unsatisfied, and hence unhappy. It is better, then, that we seek to grasp the nature of the physical world, even once we have left that world. This is, no doubt, a less awe-inspiring object than God himself. But at least it is something that we can fully grasp.

These theological reflections illustrate just how thoroughly Aquinas is committed to his distinctive view regarding the objects of intellect. At this point, as a good Aristotelian, Aquinas should use this result to show us something about the nature of intellect itself – approaching the soul's capacities through their objects. Indeed, since other created intellects (those of the angels) do not have material natures as their objects, we might anticipate that Aquinas will now have something really interesting to say about how our minds are fundamentally different from the minds of the angels. Alas, we never get quite that far, because Aquinas thinks we are not now in a position to say very much about the intellect's inner nature.¹¹ What we can do, however, is say something interesting about how the intellect operates: *we can say that it operates through the process of abstraction from sensible data*. To go only this far is still very much in the spirit of the governing Aristotelian methodology, according to which 'acts and operations are conceptually prior to their capacities ... and prior to these are their objects, (*De anima*, II.4, 415a18–20). Instead of leaping all the way from the intellect's objects to its very nature as a capacity, Aquinas makes a halfway leap from the intellect's objects to its operations, saving for some future generation the more difficult question of the intellect's nature.

Let us too set aside that more difficult question, and focus on the process of abstraction. As the previous paragraph implies, Aquinas postulates abstraction not because it answers to any sort of introspective data about how our intellect works, but because it seems entailed by his view that the objects of intellect are the natures of material things. Since he is not a Platonist, he cannot accept that these natures exist on their own, outside of particulars. Yet since the intellect grasps the universal, not the particular, he also cannot allow that the intellect grasps these natures as they exist in particulars. Describing the difference between Aristotle and Plato in this respect, Aquinas writes that 'Aristotle was led to hold that the things that are intelligible to us are not intelligibles existing per se; instead, they are *made* out of sensible things' (*SCG*, II.77.1584) – that is, made *by intellect*. Of course we are not supposed to conclude that the intellect *simply* makes up these common natures. They are 'made' by intellect in the sense that the natures of material objects must be made intelligible by abstracting away the individuating conditions of the object. At the same time, the real object of intellectual inquiry *is* the material world – it is not as if we are primarily concerned with our own thoughts. Thus Aquinas arrives at the

¹¹ Aquinas does reach some very general conclusions, in places like *ST*, 1a Q79, such as that the intellect is distinct from the soul's essence, that it is passive, that there is also an active intellect, that both passive and active intellects are parts of the soul and different for each human being. But these results are of course highly schematic.

following conclusion: 'it is natural to us, through intellect, to cognize natures that have existence only in individual matter – not as they are in individual matter, but as they are abstracted from that matter through the consideration of intellect', (*ST*, 1a 12.4c).

We can now turn to the two puzzles that will be the subject of this paper. First, what are these abstract natures that are so central to our intellectual life? Second, if the world is concrete and particular, then how can such abstract thought yield true beliefs about that world?

2 The Fruits of Abstraction

When modern philosophers speak of abstract objects, they mean things that actually exist, but in a mode not subject to the rules governing ordinary, concrete existence. Such objects may, for instance, not have a location, or may have more than one location, and they may not exist in time, or be subject to change, or have any causal efficacy.¹² Aquinas's conception of abstractness involves none of these things. His objects of intellect are abstract only in their content; their mode of existence is perfectly concrete, albeit immaterial, inasmuch as they exist as forms within intellect. Indeed, Aquinas's conception of abstractness might seem utterly irrelevant to the modern idea, if not for the fact that Aquinas uses that concept to do exactly the work that modern platonists want to do with their concept of abstractness. What both parties are after is an account of how we think and talk about universal concepts, including natural properties, logical concepts, and mathematical truths. For modern platonists, these things exist, abstractly. Accordingly, when we think and talk about universal properties, etc., we are referring to things that actually exist. Aquinas utterly rejects this idea that there is some mode of existence other than the concrete, particular mode. Accordingly, when we think and talk about universal properties, etc., our thoughts do not precisely correspond with anything that actually exists. Nevertheless, these thoughts are the product of what exists, formed through a process of abstraction that captures certain aspects of the world at the expense of other aspects. To be abstract, for Aquinas, is not a way of existing but rather a way of representing things in the world.

If Aquinas's account could actually do the work it sets out to do, then it would surely be preferable to the modern platonic conception of abstract objects. The obscurity of that modern conception makes Aquinas's account far more attractive, other things being equal. Responding to the original Platonism, Aquinas writes that 'because Plato did not consider this sort of abstraction, he was compelled to posit separated mathematical entities and species' (*InDA*, III. 12.300–303). The suggestion is that Plato simply didn't consider the possibility of letting the abstractness hold only at the level of content. But of course it may be instead that Plato (and later

¹² For some puzzled queries regarding this conception of abstract entities, see the introduction to Burgess and Rosen (1997).

platonists) have seen such a possibility and rejected it as unworkable. We therefore need to consider just how viable an account Aquinas is offering.

Abstraction separates off the matter in favor of the form. But this simple formula obscures more than it reveals, because Aquinas thinks that there are different kinds of forms, and also different kinds of matter. With respect to form, Aquinas believes that the ultimate goal of intellectual abstraction is to arrive at the substantial form, but that more often we arrive at one or another accidental form. As we will see below, he thinks that human beings never, or almost never, grasp the substantial form itself. This is roughly to say that the essences of things are hidden from us. The best we can do, generally, is to grasp hold of certain accidents that are closely connected to that essence, in the sense that they are reliable marks of the essence.

Aquinas also distinguishes between different kinds of matter, and here the kind of matter that we abstract from depends on the sort of inquiry we are engaged in. As is well known, he divides matter into two kinds, *signate matter* and *common matter*, the former being the distinct matter possessed by a given individual, and the latter being matter conceived of apart from its individuating conditions within a given particular. When I spoke in the previous paragraph as if the substantial form were the essence, that was an oversimplification: in fact the essence is the substantial form *plus* the common matter.¹³ Aquinas also divides matter in another way, into *sensible matter* and *intelligible matter*. The former underlies sensible qualities – that is, those qualities that can bring about change in the five external senses (color, heat, hardness, etc.). The latter underlies quantity – that is, shape, size, and number.¹⁴ Since these divisions are orthogonal, they yield four kinds of matter:

Signate sensible matter	Common sensible matter
Signate intelligible matter	Common intelligible matter

The difference across the first row, as Aquinas describes it, is that common sensible matter is flesh and bones, whereas signate sensible matter is *this* flesh and *these* bones. The latter always gets abstracted by intellect, inasmuch as that kind of matter holds only of individuals. Common sensible matter, however, is not always abstracted. For if the goal is to understand the nature of some material substance, then the intellect must reach a generalized understanding of the matter required for such a nature.

13 '[A]d naturam speciei pertinet id quod significat definitio. Definitio autem in rebus naturalibus non significat formam tantum, sed formam et materiam. Unde materia est pars speciei in rebus naturalibus: non quidem materia signata, quae est principium individuationis, sed materia communis' (*ST*, 1a 75.4c).

14 'Materia enim sensibilis dicitur materia corporalis secundum quod subiacet qualitatibus sensibilibus, scilicet calido et frigido, duro et molli, et huiusmodi. Materia vero intelligibilis dicitur substantia secundum quod subiacet quantitati. ... ut numeri et dimensiones, et figurae, quae sunt terminationes quantitatum ...' (*ST*, 1a 85.1 ad. 2).

Natural entities are understood through abstraction from individual [i.e., signate] matter but not through abstraction from sensible matter entirely. For a human being is understood as made up of flesh and bones, but understood through abstraction from *this* flesh and *these* bones. (*InDA*, III.8.231–6)

There is some question about just what is being abstracted away in the move from *this* flesh to flesh in general. Often, he says that to grasp the singular is to grasp it as here and now, *hic et nunc* (e.g., *ST*, 1a 57.2c). This phrase must refer to more than just time and place, since the abstract understanding of a common nature will abstract from many other things as well. In using this phrase *hic et nunc*, Aquinas suggests a demonstrative grasp of the thing right in front of us, in all (or at least many) of its particular characteristics. In contrast, if we are aiming at a general understanding of human nature, then we will need to know the *kind* of body that human beings have, but not the particular color or smell of a given body. This first kind of abstraction, the abstraction of the natural philosopher, thus involves separating out the qualitative aspects of a material substance that are inessential to its nature. This is to abstract away signate sensible matter. Such abstraction also involves separating out the signate intelligible matter, since the natural philosopher will abstract away various accidental *quantitative* aspects, such as being six feet tall or fat.¹⁵

A second kind of abstraction, mathematical abstraction, goes one step further. It abstracts not only from both kinds of signate matter but also from common sensible matter. In explaining the difference, Aquinas uses Aristotle's example of the difference between the concept of *snub* and the concept of *curved*. To have the concept of *snub* one has to have the concept of *nose*, or so Aristotle had insisted. As Aquinas puts it, 'sensible matter – specifically, a nose – falls within the definition of snub' (*InDA*, III.12.282–3). This is to say that *snub* is a natural concept, along the same lines as *human being*, *vertebrate*, or *feathered*. It cannot be understood apart from some reference to matter. The concept of *curved*, in contrast, can be abstracted not only from any determinate matter, but also from even a generalized conception of sensible matter. To have the concept of *curved*, all one needs is the general concept of extended stuff.

[Q]uantities such as numbers and dimensions, and also shapes (which are the limits of quantities) can be considered without their sensible qualities, which is for them to be abstracted from sensible matter. But they cannot be considered without understanding a substance underlying the quantity, which would be for them to be abstracted from common intelligible matter. Still, they can be considered without this or that substance, which is for them to be abstracted from individual intelligible matter. (*ST*, 1a 85.1 ad. 2)

15 Oddly, Aquinas often refers exclusively to signate sensible matter in this connection: see *ST*, 1a 85.1 ad. 2; *InDA*, III.8.222–38; *InDA*, III.12.277–97. In contrast, *De ente*, 2.75–84 describes signate matter as matter 'considered under determinate dimensions,' and remarks that the definition of *homo* includes non-signate matter – evidently, matter not considered under determinate dimensions.

Mathematical concepts are therefore in a way material concepts, in as much as they cannot be grasped without a conception of extended matter.

This account of mathematical concepts seems open to quite a few lines of objection, of which I'll briefly consider two. First, it is not clear that it holds for number, even if it holds for shape and size. One can count angels, presumably, without making reference to matter. Aquinas grants that one can count the angels, and even the divine persons. He insists, however, that these claims are based on a concept of number that is metaphysical rather than mathematical. Our mathematical concept of number is based on the concept of a continuum, which in turn presupposes the concept of extension and therefore matter. Accordingly, the claim that *number* is a material concept rests on a further claim that cannot be evaluated here, that we have two distinct number concepts.¹⁶ Second, one might think that the concept of *curved* and the like can be understood as grounded on the concept of space, rather than the concept of matter. Now, from a physical standpoint, Aquinas denies that there can be space apart from matter – that is, he denies that there can be a vacuum.¹⁷ Still, one might insist that it is possible to have the *idea* of space without matter, and so possible to conceive of *curved* and the like independently of extended matter. Indeed, one might think that this is not just a possible but indeed the actual way in which we conceive of geometrical concepts. I think Aquinas must simply deny this. In the passage just quoted, he remarks that such concepts 'cannot be considered without understanding a substance underlying the quantity.' This is to say, I take it, that the concept of *curved* makes no sense apart from the concept of something's being curved. But space, as Aquinas understands it, is not a thing all by itself. Hence empty space cannot be conceived of as curved. If it seems to you that you are conceiving of a curve in space, Aquinas would contend that you must be conceiving of that space as filled in with some thing that serves as the substance underlying the curve. Indeed, for Aquinas it seems that the concept of *space* is just one more concept that can be formed only through mathematical abstraction.

A third and final kind of abstraction occurs in metaphysics, when we abstract away from all four kinds of matter and consider concepts such as being, one, truth, potentiality, and actuality. Such concepts can be understood apart from all matter; indeed, Aquinas supposes that such concepts actually are instantiated in immaterial substances.¹⁸ So conceived, metaphysics turns out to come *after* physics in the sense that it involves one further step in abstraction, beyond what is required for mathematics.

16 See *ST*, 1a 11.4 ad. 2, 30.3c, and 50.3 ad. 1. For discussion, see Klima (2000).

17 See *InPhys*, 4.12–14.

18 'Quaedam vero sunt quae possunt abstrahi etiam a materia intelligibili communi, sicut ens, unum, potentia et actus, et alia huiusmodi, quae etiam esse possunt absque omni materia, ut patet in substantiis immaterialibus' (*ST*, 1a 85.1 ad. 2). For the case of truth, see I *Sent.*, 19.5.1c. That same passage also discusses the case of time, which seems to fall into the class of mathematical concepts, inasmuch as time has underlying it the concept of *motion*.

This account of the varieties of abstraction raises many more questions than it answers, and I will address some of them shortly. But there is one attractive aspect of the theory that should be stressed immediately: the way it offers a coherent account of how human intellectual inquiry is structured. At the front end of Aquinas's story, there is the empiricism that leads him to remark that 'the whole of the intellect's cognition is derived from the senses' (*InDT*, 1.3c). The subsequent contribution of intellect turns out to be the stripping away of successive layers of sensory information: first the particular qualities and quantities of an object, next all qualities even in general terms, and finally even the very notion of extension, so that nothing remains that is distinctively material about the information. To a considerable extent, the unity of this account confirms the methodological claims made at the end of §1. Though Aquinas's identification of material natures as the objects of intellect does not yield a substantive theory of the intellect's nature, it does yield a comprehensive theory of how the intellect operates, through abstraction. What begins as an account of how the intellect manages to conceive universally of the material world develops into a comprehensive story about all human thought, even in areas like mathematics and metaphysics.¹⁹ By nature, our minds are designed to grasp the material world in its essential respects. Inevitably, the method we deploy there is the method we deploy everywhere, even in cases where we attempt to go well beyond our native field of inquiry. In this way, Aquinas's account of the intellect's proper object provides the key to his whole theory of intellectual cognition.

Interestingly, the theory itself exemplifies the process it describes, in as much as the kinds of matter at issue are themselves abstractions. What there are in the physical world are composite substances. We can talk about them as composed of form and matter, but – with the one exception of the human soul – these are conceptual parts, not substantial parts (like a kidney or a hand) that might exist on their own. A thing's 'signate sensible matter' is a part of it only in an abstract conceptual sense – that is, we form the concept of a thing's particular sensible qualities by abstracting from its other characteristics. And once we've identified that aspect of a thing, by abstraction, we can invert our focus and decide to abstract away from the aspect that we've just singled out. In short, to talk of matter – whether it be signate or common matter, sensible or intelligible matter, or even prime matter – is already to engage in abstraction.²⁰

There are obvious and well-known difficulties with this conception of human understanding. One of the best publicized objections is that of Berkeley, who sardonically remarked that 'he who is not a perfect stranger to the writings and disputes of philosophers must needs acknowledge that no small part of them are spent

19 Aquinas extends the story to theology as well, remarking for instance that 'incorporea, quorum non sunt phantasmata, cognoscuntur a nobis per comparationem ad corpora sensibilia' (*ST*, 1a 84.7 ad. 3).

20 In Pasnau (2002), Part One, I argue that this understanding of the form-matter distinction is crucial for understanding Aquinas's conception of how body and soul make up a single unified thing.

about abstract ideas' (*Principles*, Intro. §6). Berkeley takes this to be disastrous, of course, arguing that one cannot have an abstract idea of, say, human being in general, only the idea of a white one, a black one, a tawny one, etc. (*ibid.*, §10). Aquinas has a quick reply to this, which is that Berkeley is confusing imagination and thought.²¹ Aquinas can grant that imagination always concerns determinate particulars, and Aquinas himself insists that thoughts are always accompanied by imagination – this is what he calls the turn toward phantasms. Berkeley's error, from Aquinas's perspective, is to treat this constant stream of images as if they were the content of our thoughts. But for Aquinas, of course, intellectual thought is entirely distinct from imagination, and does not consist in sensory images at all. To decide whether you can have the abstract thought of a human being, don't try to form a mental picture of such a thing – that's the wrong level, the level of phantasms. Instead, ask yourself whether you understand what I am talking about when I talk about the human species, and whether you can do so without either of us making reference to any particular member of that species. If you understand my words in this way, then you have the concept.

If we allow ourselves to accept the very idea of abstract ideas, then the next worry that naturally arises is how the intellect manages to make the transition from concrete sensory impressions to abstract ideas such as *human being*, *curved*, or *truth*. How, in other words, does intellect manage to separate out what is material and accidental, and focus on the thing's essence? Here one might immediately raise questions about whether there are such things as essences at all. But I want to set aside that question until §4, and focus on the problem of how the intellect knows what to abstract and what not to abstract. It must be said that Aquinas does not have anything very illuminating to say about this problem. He says things like the following:

And this is to abstract the universal from the particular, or an intelligible species from phantasms: to consider the nature of the species without considering the individual principles that are represented by the phantasms. (*ST*, 1a 85.1 ad. 1)

Here, and elsewhere, abstraction is simply a process of selective attention, whereby the agent intellect focuses on one thing (the form alone) and brackets off the rest (the particular material conditions). This capacity of agent intellect seems to be, for Aquinas, entirely primitive, in the sense that it cannot be analyzed or explained any further. It is just something we are able to do.

Peter Geach has argued that Aquinas does not believe in abstraction, when that is understood as 'the doctrine that a concept is acquired by a process of singling out in attention some one feature given in direct experience – *abstracting it* – and ignoring the other features simultaneously given – *abstracting from them*' (1957, p. 18). It

21 In fact Berkeley does go back and forth between talk of imagining and talk of conceiving, e.g. in §10: 'I have a faculty of imagining, or representing to myself. ... [W]hatever hand or eye I imagine. ... [T]he idea of man that I frame to myself. ... I cannot by any effort of thought conceive the abstract idea above described.'

seems fairly clear, however, that this *is* Aquinas's view, more or less. Certainly he does think of abstraction as a matter of selective attention, singling out some one feature while ignoring others. Now one might wonder whether the agent intellect singles out a feature 'given in direct experience,' as Geach puts it here. Obviously, there is a sense in which the concepts acquired are not sensory concepts at all. Still, Aquinas does insist that the information singled out by agent intellect is information that is somehow present at the sensory level. He says this fairly explicitly:

If the senses apprehended only that which belongs to the particular, and in no way were also to apprehend the universal nature in the particular, then it would not be possible for a universal cognition to be caused in us by a sensory apprehension. (*InPA*, II.20.266–71)

It seems fair to say, then, that what the agent intellect abstracts is 'given in direct experience,' though of course the senses are incapable of recognizing it.

Geach reaches his conclusion not through textual evidence but through the philosophical conviction that such an account would be utterly unworkable.²² That, combined with the principle of charity, gets him his interpretive conclusion. Now this may not be a model of how to go about studying the history of philosophy. But it seems to me nevertheless that there is something right in what Geach is claiming. What is right is that Aquinas did not think abstraction, all by itself, could contribute very much to the intellect's ultimate goal of grasping the natures of material things. It is not as if the agent intellect encounters the phantasm of a dog and immediately singles out what it is to be a dog, the essence of doghood. This happens, if it happens at all, only at the end of a long process that involves the agent intellect, the possible intellect, and a continual recurrence to phantasms. Abstraction is just one small part of this process, the part that gets us from images of particulars to general concepts. Initially, those general concepts will be so general and uninteresting as to be of virtually no value – these will be concepts like being, goodness, and truth. (It is a mistake to suppose that the *generality* of these concepts makes them *interesting*.) In time we manage to reach an increasingly fine-grained understanding of the world, but we do so through reasoning, not through the brute force of abstraction.

All of this makes it easier to accept that Aquinas conceives of abstraction simply in terms of selective attention. Though it is disappointing to learn that he has nothing more to offer, we can take solace in the fact that abstraction isn't doing nearly as much work as one might suppose. This is not to say that an account of intellect's operations can leave abstraction on the sidelines. Even if abstraction does not immediately yield a clear and distinct understanding of the natures of material things, through the magic of agent intellect, nevertheless the ongoing intellectual activity that aims at that goal is continuously an attempt at abstraction. For human beings, in large part, thinking is abstracting.²³ The goal, always, is to single out those

22 For another negative assessment of the workability of abstraction, see King (1994). I take what follows in the main text to be a reply to King as well as to Geach.

23 I do not mean to suggest that this is all thinking consists in; I am setting aside the subsequent intellectual operations of composition–division and reasoning. These processes

aspects of the world around us that are essential, while bracketing off the rest. As we learn more about the world, we become increasingly good at focusing on what is essential, we learn how to see things, as it were, which is to say that we learn to recognize what things truly are, as opposed to what is accidental in them. Aquinas considers the objection that if the agent intellect were a power of the human soul, then we would all understand everything right away (*ST*, 1a 79.4 obj. 3). He replies that this is not so, partly because we need the right phantasms, and partly because we need ‘practice in activity of this sort – for one thing grasped by intellect leads to others, as terms lead to propositions and first principles lead to conclusions’ (ad. 3). This is to say that the agent intellect, in concert with the possible intellect and the senses, builds up a capacity to understand the world as it is. Abstraction does not happen by magic (or by divine illumination), but in the end the result of human thought is an abstract conception of the world around us.²⁴

3 Abstract Truth

Once we set aside the problem of *how* the intellect manages to form abstract concepts of the world, we can focus on the question of what these concepts tell us about the world. More specifically, there is a question of whether abstract thoughts can be true. For the platonist, there is of course no worry here, because abstract thoughts can straightforwardly refer to abstract objects. But Aquinas, as we have seen, rather quickly dismisses platonic objects of all sorts, replacing abstract entities with abstract thoughts. The obvious worry is that there is nothing for these thoughts to refer to. This worry is an old one, and Aquinas is well aware of it. In considering whether the intellect does indeed form its concepts through abstraction, he considers the following as the very first objection:

Any intellect that understands a thing otherwise than it is is false. But the forms of material things do not exist abstracted from the particulars that phantasms are likenesses of. Therefore if we understand material things by abstracting species from phantasms, there will be falseness in our intellect. (*ST*, 1a 85.1 obj. 1)

Aquinas’s solution is familiar to the point of tedium. I will quote it nevertheless:

Abstracting takes place in two ways. First, by way of composition and division, as when we understand something not to be in another or to be separated from it. Second, by way of a simple and absolute consideration, as when we understand one thing while not considering the other at all. So to abstract through intellect things that are not abstract in reality – by abstracting in the first way – is not without falseness. But there is nothing false

strike me as much less mysterious.

24 I discuss some of these issues at more length in Pasnau (2002), ch. 10.

in the second way of abstracting through intellect things that are not abstract in reality. (ibid., ad. 1)²⁵

The passage goes on to give the example of an apple. One can understand the apple's color while understanding nothing about the nature of the apple, and there is nothing false in doing so – just so long as one does not form the judgment that the apple is not red, or that red can exist outside of matter.

This is at best a first step toward solving the real problem here, and it is not a terribly illuminating step. The first kind of abstraction described above involves the formation of a proposition, the understanding *that* something is (not) the case. Here, Aquinas readily concedes, we may well go wrong. The second kind of abstraction results in the simple understanding of some form in the abstract. The point, one might suppose, is that this kind of simple abstraction *cannot* be false, because the result is not a proposition at all, and so not the sort of thing that can be false. But this is not what Aquinas means, because 'false' on his usage can bear the extended sense of *nonveridical*, and hence can apply to any kind of cognition that does not depict the world as it is. So Aquinas's point here must be that simple abstraction does not get the world wrong in this way. Other passages supply some guidance as to how this is so. He remarks that 'the truth of an apprehension does not require that when one apprehends some thing one apprehends all the things in it' (*InDA*, II.12.131–4). Since abstraction just is the process of selectively apprehending certain aspects of a thing, it is not necessarily false. Of course, it is possible for one's efforts at abstraction to fail. He remarks,

of things that are conjoined in reality one can be understood without the other, and truly, as long as it is not the case that one of them is included in the other's nature (*ratio*). For if Socrates is musical and white, I can understand *whiteness* while understanding nothing about music. On the other hand, I cannot understand *human being* while understanding nothing about *animal*, since *animal* is included in the nature of *human being*. (*InDA*, III.12.261–8)

So simple abstraction is false only if it abstracts in a way that cuts across the nature of what is being abstracted, leading to the formation of a fragmented and incoherent idea.

At this point, one might once again want to raise the question of *how* the intellect manages to cut the world up in the right way – of why, in other words, such abstraction isn't false all the time, given the difficulty involved in grasping the true natures of things. If the claims of the previous section were correct, then Aquinas

25 The specific formulation of the problem that Aquinas considers in 85.1, as well as his reply in ad 1, comes straight from Boethius, *Second Commentary On Porphyry's Isagoge*, I.10–11 (trans. Spade, pp. 23–4). Aristotle had already considered much the same objection, in the context of mathematical ideas (*Phys.*, II.2 193b33–7), and Aquinas's commentary on that passage is thorough and interesting (*InPhys.*, II.3.158–62). For other passages in Aquinas, see *ST*, 1a 13.12 ad. 3, *InDA*, III.8.239–63, *InDA*, II.12.116–39, *InDA*, III.12.261–97, *InDT*, 5.3.

should grant that the road to success here is long and difficult. Yet if that is right, then why do these passages seem so optimistic about our ability to grasp the truth through abstraction? This is a question I will return to at the end of the next section. For now I want to focus on why the explanation offered here, even if accepted, falls well short of being satisfactory. The heart of the problem is that Aquinas is willing to concede the following:

[T]he object of our intellect is not something existing outside sensible things, as the Platonists claimed, but something existing in sensible things, although the intellect apprehends the quiddities of things differently from the way they are in sensible things. (*InDA*, III.8.242–7)

Within sensible things, these quiddities are of course particular, whereas within intellect they are universal. The concern, then, is that abstraction doesn't merely involve a selective focus on certain aspects of reality, but that it in fact distorts reality, by depicting it in a way it is not. This last result is unacceptable to Aquinas. He remarks, for instance, that 'the conceptions of intellects are a kind of likeness of the things understood. If, however, the conception of intellect were not made to be like the thing, then that conception of the thing would be false' (*De 108 articulis*, prologue 9–12). Elsewhere, rather than speak of a likeness, he uses the language of correspondence: 'The nature (*ratio*) is said to be in the thing inasmuch as there is something in the thing outside the soul that corresponds (*respondet*) to the conception of the soul' (*I Sent.*, 2.1.3c).

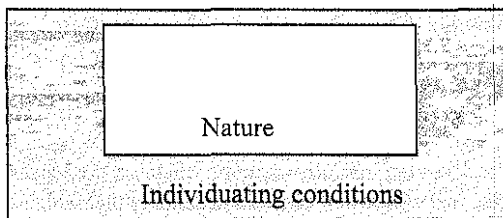
Hence Aquinas must deny that the intellect depicts reality in a way it is not. Abstraction must not distort reality; it must only select out certain portions of reality. And indeed Aquinas takes great pains to stress that this is precisely what happens. After conceding, in the above passage, that 'the intellect apprehends the quiddities of things differently from the way they are in sensible things,' he immediately continues:

For it does not apprehend them with the individuating conditions that are adjoined to them in sensible things. And the intellect can achieve this without any falseness, for nothing prevents one of two things conjoined to each other from being understood without the other's being understood. (*InDA*, III.8.247–52)

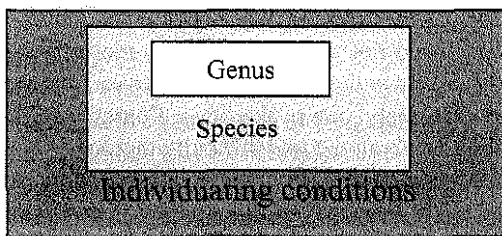
So again we get the line that abstraction is simply a matter of selective attention, along with the idea that the quiddity conceived by intellect really is within the thing, but is there along with an accretion of individuating, material conditions. Elsewhere we get much the same picture:

Although the nature of a genus and a species exists only in particular individuals, nevertheless the intellect understands the nature of the species and the genus without understanding the individuating principles, and this is to understand universals. Thus it is not a contradiction that universals do not subsist outside the soul, and that the intellect, in understanding universals, understands things that are outside the soul. (*SCG*, II.75.1551)

What Aquinas seems to insist on – what it seems he must insist on – is that the nature of a species exists within each member of that species, as a kind of essential kernel covered up by the shell of material conditions that distinguish each individual.



Evidently, this same account must hold not just at the species level, but at each higher genera, so that there will be kernel within kernel, as successive layers of differentiae are stripped away.



In this way, the accidental differences of a substance cover up layer after layer of formal structure, each layer qualitatively identical to a corresponding layer in other substances of that kind. If material substances were not structured like this, then it seems that the process of abstraction would distort reality, imposing a structure that is not there, fudging ineliminable differences between individuals.

There is a considerable obstacle to this interpretation of Aquinas, for he is adamant that the logical framework of species and genus does not track a distinction between forms within a substance. His controversial unitarian stance regarding substantial form leads him to reject the pluralist account according to which a human being is rational in virtue of one form, sensory in virtue of another, living in virtue of a third, etc. Thus he remarks, 'the distinction of species and genus does not require a *real* distinction between forms, but only an *intelligible* distinction' (*QDSC* 3 ad 3). The insistence that there is no real distinction to be had here seems to undermine the layered structure described in the previous paragraph. The problem is most obvious at the genus level, since Aquinas is so insistent that all the genera fall out of the one substantial form that gives a thing its species.²⁶ But the same problem arises

²⁶ '[I]ta nec per aliam animam Socrates est homo, et per aliam animal, sed per unam et eandem' (*ST*, 1a 76.3c).

at the species level, since Aquinas does not believe that two members of the same species share forms that are exactly alike.²⁷ Even here, the classificatory scheme of genus and species does not track the ontological structure that Aquinas ascribes to the world.

The following passage explicitly confronts this objection:

It is not required that one treat diversity among natural things in terms of the diverse accounts (*rationes*) or logical conceptions (*intentiones*) that result from how one understands them. For reason can grasp one and the same thing in different ways. So, as was said, the intellective soul virtually contains whatever the sensory soul has, and more still. It follows, then, that reason can consider separately that which involves the power of the sensory soul – taken as something incomplete and material. And because reason finds this to be common to humans and other animals, it forms on this basis an account of the genus. Meanwhile, reason takes that in which the intellective soul exceeds the sensory as something formal and perfecting, and on that basis it forms the differentia of human being. (*ST*, 1a 76.3 ad. 4; see also *QDSC*, 3c)

The framework of logical conceptions, which just is the genus–species framework of the Porphyrian tree, need not correspond to any real differences within things. Even if there is no difference at the level of form between *rational* and *sensory*, still ‘reason can consider separately’ one or the other. Regrettably, the passage is not as forthcoming as it might be about the real difficulty that looms. One might wish that, here at least, Aquinas had resisted his chronic inclination to make matters appear more smooth and seamless than they really are. For if he is simply going to grant that our logical conceptions do not correspond to the formal structure of substances, then he needs to give us some account of why these logical conceptions describe the world as it really is. He tells us here that ‘because reason finds this [sensory capacity] to be *common* to humans and other animals, it forms on this basis an account of the genus.’ But he does not address the crucial question of what such commonality amounts to.

There is a reason why Aquinas cannot say much more at this point. Earlier, at the end of §1, we saw how his theory of intellect goes from objects to acts, but then falls relatively silent at the level of capacities. That silence grows still deeper when Aquinas moves from the soul’s capacities to its very essence. When it comes to the question of what my soul has in common with the soul of a bear, Aquinas cannot give a very full account. He thinks he can rule out the view that the bear and I both have a sensory soul, and that I have an additional rational soul. Rather, the bear has its substantial form, and I have mine, and they have some common features. What features, exactly? In answering this question, Aquinas is forced to descend to the

27 ‘Manifestum est enim quod quanto corpus est melius dispositum, tanto meliorem sortitur animam, quod manifeste apparet in his quae sunt secundum speciem diversa. Cuius ratio est quia actus et forma recipitur in materia secundum materiae capacitatem. Unde cum etiam in hominibus quidam habeant corpus melius dispositum, sortiuntur animam maioris virtutis in intelligendo’ (*ST*, 1a 85.7c).

level of operations. The capacities for sensation and nutrition are common to me and to a bear; since Aquinas takes these powers to flow from the soul, there would seem to be some sort of commonality within soul. But possession of these capacities is just a *sign* of our sharing a genus. The *reason* we share a genus is that we have something common within our souls that makes it the case that we share these relatively superficial operations.²⁸ Lacking good information about the essences of things, Aquinas must do the best he can. His position is analogous to that of a biologist who aspires to appeal to differences in DNA, but who is forced (for now) to settle for gross anatomical differences. Yet Aquinas's position is worse, because whereas we now know what it means for two DNA strands to have more or less in common, Aquinas has no account of how two essences might have something in common. And though his language suggests the kind of structured view I described above, it is not at all clear that a soul – that is, the soul's essence as distinct from its capacities – can have that sort of structure. He holds that the soul is 'one and simple in essence' (*QDA*, 10 ad. 17). This is difficult to square with the suggestion that the natures of material substances contain kernels within kernels, ready to be abstracted away by intellect.

Rather than speculate further on how essences might or might not be structured, it seems better to conclude that the method of abstraction is not suited to go that far. We can use abstraction to form a conception of the genus *animal*, by focusing on the operations and hence capacities that all animals share. On that basis, we conclude that my essence has something in common with the essence of a bear. But at that level we have no real purchase on what commonality consists of, because we have absolutely no conception of what it would mean for two essences to have something in common. We *can* say that they give rise to common capacities and operations. But we do not understand essences well enough to perform any sort of abstraction directly on that level. Since abstraction is the mode in which our intellect functions, it truly is the case, as Aquinas regularly says, that the essences of things are unknown to us.²⁹

In all of this, I have been taking for granted that common natures are not *literally* shared. In every case, the commonality in question is merely qualitative. On this point, Aquinas is quite definite: there is mere resemblance between particulars without any sort of numerical identity.

It is not necessary that, if this is a human being and that is a human being, there is numerically the same humanity for each – just as in the case of two white things there is not numerically the same whiteness. Instead, what is necessary is that this one is like

28 '[R]ationale et sensibile, prout sunt differentiae, non sumuntur a potentiis sensus et rationis, sed ab ipsa anima sensitiva et rationali. Quia tamen formae substantiales, quae secundum se sunt nobis ignotae, innotescunt per accidentia, nihil prohibet interdum accidentia loco differentiarum substantialium poni' (*ST*, 1a 77.1 ad. 7).

29 See, e.g., *InDA*, I.1.254–5, *I Sent.*, 25.1.1 ad. 8, *II Sent.*, 3.1.6c, *QDV*, 4.1 ad. 8, 10.1c, 10.1 ad. 6, *InMet*, VII.2.1277, VII.12.1552. I will return to this issue at the end of §4. For further discussion, see Pasnau (2002) §5.5.

that one in that it has humanity just as the other does. It is the intellect, in taking up humanity not inasmuch as it belongs to this one, but as it is *humanity*, that forms an intention common to all. (II *Sent.*, 17.1.1c)

Thus, as he often says, universals exist only within intellect; everything outside the mind is particular.³⁰ There is, of course, unending controversy over whether one can solve the problem of universals without having recourse to universals *in re*. For present purposes, we might focus on two particular issues. First, because he settles for natures that are merely qualitatively alike, Aquinas seems to have no way of explaining what such likeness consists in. (For the realist, in contrast, two things can be alike in virtue of literally sharing some form or property.) Aquinas does hold that all similarity arises from agreement at the level of form,³¹ but in the present context that doesn't help, because the question remains of what it means for two particulars to agree in form. This outcome does not seem to trouble Aquinas, however, because he shows no signs of supposing that there is anything more to be said about what *agreement* amounts to in such cases. The concept seems to be a primitive one.

A second issue, more urgent in the present context, is that we again seem to face the problem of *truth*, because it seems once again that the intellect is not representing things as they are. In the mind, natures are conceived of as universal, but in reality they are always particular. Up until now, the strategy has been to show how this particularity could be stripped away, revealing a common nature. But, as we've just seen, the most this strategy will yield is a nature that is qualitatively common. Within intellect, however, the nature is universal. So we seem once again to have violated the principle that there be 'something in the thing outside the soul that corresponds to the conception of the soul' (I *Sent.*, 2.1.3c). It seems to me that Aquinas has a reply analogous to the earlier strategy. Very often, he describes universality as something that the intellect adds to the concept, something that he calls an 'intention of universality.' In a useful passage from near the start of his *Sentences* Commentary, he describes three ways in which names signify things in the world. In one way, what is signified exists 'outside the soul according to its complete existence,' such as a

30 'Sic igitur patet quod naturae communi non potest attribui intentio universalitatis nisi secundum esse quod habet in intellectu: sic enim solum est unum de multis, prout intelligitur praeter principia quibus unum in multa dividitur. Unde relinquitur quod universalialia secundum quod sunt universalialia non sunt nisi in anima, ipsae autem naturae quibus accidit intentio universalitatis sunt in rebus' (*InDA*, II.12.139–47). '[I]n Sorte non invenitur communitas aliqua, sed quicquid est in eo est individuatum' (*De ente*, 3.80–82).

31 'Similitudo autem inter aliqua duo est secundum convenientiam in forma' (*QDV*, 8.8c). It is tempting to say that likeness consists in sharing the same form, but we have just seen why that is not the case. The bear and I are similar with respect to being animals, but not in virtue of sharing *animality* or any other form. In some contexts, Aquinas follows Aristotle in reserving 'likeness' for cases of qualitative resemblance, and speaks of *sameness* between members of the same species or genus (see, e.g., *InMet.*, X.4.1999). In the present context, nothing much seems to rest on this usage.

particular human being. In another way, what is signified has no existence outside the soul, like a chimera. Finally,

there are some that have a foundation in a thing outside the soul, but the completion of their *ratio*, with respect to what is formal, is through the soul's operation – as is clear in the case of universals. For humanity is something in a thing, but it does not there have the *ratio* of the universal, since there is no humanity outside the soul that is common to many. But in virtue of its being taken up in intellect, it has adjoined to it, through the operation of intellect, an intention, in virtue of which it is said to be a species. (*I Sent.*, 19.5.1c)

This passage illustrates all the main strands of Aquinas's account. First, 'humanity is something in a thing,' which is to say that the intellect's abstract conception of a common nature does directly correspond to something in the world. Second, the humanity that exists in things is particular, because 'there is no humanity outside the soul that is common to many.' Third, the intellect's understanding of *humanity* does not distort that concept but simply adds something to it: the concept has 'adjoined to it ... an intention ...'³² The point, I take it, is that the *content* of the thought exactly corresponds to the nature as it is in the world, within particulars. But the intellect attaches to this content something akin to a propositional attitude: it applies the concept universally to all members of the species. Just as in the statement 'She fears her father' we can distinguish between the attitude (*fears*) and the content (*her father*), so in 'She understands humanity' we can distinguish between the content (*humanity*) and the attitude (*understands*), which involves applying the concept generally to all particular instances. In this way, just as within particulars it is possible to distinguish a common kernel that corresponds to the abstract concept, so within intellect it is possible to distinguish the abstract concept from the intention of universality. This description of an abstract concept just is what Aquinas refers to as an 'absolute consideration,' with respect to which he famously remarks, 'if it were asked whether the nature so considered can be called *one* or *plural*, neither reply ought to be granted, for each is outside the understanding of humanity, and each can accrue (*accidere*) to it' (*De ente*, 3.37–40). On the account just presented, a nature considered absolutely is not some sort of mysterious platonic entity, separated from particulars. On the contrary, such natures never exist in separation from particulars – they exist absolutely both in intellect and in the world, and this is what, for Aquinas, guarantees the correspondence between abstract thought and reality. When instantiated in intellect or in material things, such natures are always made 'one or plural' (that is, universal or particular). But this is something added on, something that 'can accrue to it.' Underneath, the nature remains the same.

³² For other discussions of this 'intention of universality,' see *ST*, 1a 85.2 ad. 2 and *InDA*, II.12.96–151.

4 Sentential Truth

To insure the truth of abstract thought, Aquinas has to insure a correspondence between concepts and reality. Yet this alone is not adequate as a general solution to the problem of abstract truth, because at best it deals with abstract concepts conceived in isolation. We further need an account of how such concepts work within sentences – that is, we need an account of sentential truth. Consider the sentences

Anna is a human being.

Tommy is a human being.

On one reading, available to the platonist, these sentences claim that there is a property, *humanity*, that Anna and Tommy participate in. On another reading, favored by some nominalists, the sentences say that Anna and Tommy belong to the set of all human beings. These analyses are both extrinsic, as we might put it, in as much as they both appeal to something outside of the subject to which the subject is somehow related. Aquinas, in contrast, wants to give such sentences an intrinsic analysis, in as much as he takes them to be true in virtue of the subjects' possessing a certain property. As natural as this approach is, it leaves Aquinas with an obvious difficulty. If it is true that Anna is a human being, and true that Tommy is a human being, then it seems that there is a property, call it *humanity*, that both Anna and Tommy possess. But, as we have seen, Aquinas denies that any properties are wholly possessed by more than one individual.³³ Now there is no one, I trust, who will insist that these sorts of linguistic data *decide* metaphysical questions. Ordinary language may suggest the existence of universals *in re*, but there may be other analyses on which that suggestion is defused. Still, it seems very much incumbent on Aquinas to provide such an analysis. If it is true that Anna and Tommy are both human beings, and if this is true by virtue of their each having a property, *humanity*, then how can we avoid the implication that they each have the *very same* property?

Aquinas has available to him a sophisticated means of handling this question, in as much as he distinguishes between two linguistic functions, signification and supposition. Very roughly, the supposition of a term is its reference, whereas its signification is its meaning. In the sentence *Anna is a human being*, the predicate and the subject both supposit for a person, my daughter. But 'human being' signifies the concept of humanity. It is in virtue of this signification that it supposits as it does, for things that have human nature. Thus 'a name, properly speaking, is said to *signify* the form or quality based on which the name is imposed, and is said to *supposit* for that which it is imposed on' (III *Sent.*, 6.1.3c).³⁴ On this account, the sentence *Anna is a*

³³ Properties might be shared in various ways – e.g., if they are relational. But no property can be *wholly* possessed by one individual and *wholly* possessed by another. Thus he remarks, as quoted above, 'there is no humanity outside the soul that is common to many' (I *Sent.*, 19.5.1c)

³⁴ 'Et nomen, proprie loquendo, dicitur significare formam sive qualitatem a qua imponitur nomen; dicitur vero supponere pro eo cui imponitur.' See also *ST*, 1a 39.4 ad. 3

human being comes out true in the most straightforward way, in virtue of the subject and the predicate being coreferential.³⁵ Sentential truth requires no abstract ontology. But the sentence nevertheless signifies something universal, which is why we can meaningfully say both that *Anna is a human being* and that *Tommy is a human being*. There is no equivocation in predicating ‘human being’ of several individuals, because the term has the same meaning (signification) in each case:

Equivocation is brought on by a different form’s being signified by the term, not by a difference in supposition. For the term ‘human being’ is not used equivocally just because it supposits sometimes for Plato and sometimes for Socrates. So the term ‘human being,’ said of Christ and of other human beings, always signifies the same form: human nature. Thus it is univocally predicated of them. (*SCG*, IV.49.3847 [12])

Once again, Aquinas thinks he can have it both ways: a robust account of abstract truth, grounded on an ontology that is essentially nominalist.³⁶

At the core of this semantic conception is Aristotle’s claim that spoken words refer to mental concepts or ‘passions of the soul,’ on the rather opaque medieval translation of *De interpretatione*, 1. Aquinas comments on this passage as follows:

‘Passions of the soul’ must here mean the conceptions of intellect that nouns and verbs and statements signify, according to the claim of Aristotle. For it cannot be that they immediately signify the things themselves, as is evident from their mode of signifying: for the term ‘human being’ signifies human nature in abstraction from singulars. Hence it cannot be that it immediately signifies a singular human being. Hence the Platonists held that it signifies the separate idea of *Human Being*. But since this, in virtue of its abstractness, does not subsist in reality, on Aristotle’s view, but exists in intellect alone, it was therefore necessary for Aristotle to say that spoken words immediately signify the conceptions of intellect and, through their mediation, signify things; (*InPH*, I.2.97–112)

The argument takes for granted that ‘human being’ signifies some one abstract thing. (If argument for this assumption were wanted, Aquinas could appeal to the point made in the previous paragraph: that otherwise the term would be equivocal across usages.) What could that one thing be? If we reject Platonic Forms, and we reject universals *in re* – a possibility that Aquinas characteristically doesn’t even deign to

and III *Sent.*, 6.1.2 ad. 4: “‘Homo’ significat humanam naturam, et supponit pro supposito subsistente in natura illa.”

35 There is considerable controversy over whether this so-called identity theory of predication holds in all cases, for Aquinas, or even holds at all. Nothing in what follows rests on this debate. For some evidence in favor of an identity theory, at least in certain cases, see *InMet.*, V.9.891, as well as the passage from *SCG* quoted in the main text at the end of the present paragraph.

36 The term ‘nominalist’ has a long and intriguing medieval history, and in the context of that story it would clearly be wrong to label Aquinas a nominalist. Yet in the modern context the label seems appropriate, inasmuch as ‘nominalism’ now standardly refers to any theory that rejects both platonic and *in re* universals. The common practice of referring to Aquinas as a conceptualist obfuscates the central issues.

mention – then the only remaining option is that ‘human being’ signifies a conception within intellect.

Of course, more has to be said at this point, because we need to account for the apparent fact that both thought and language refer to things in the world. The last passage’s closing remark about how words indirectly signify things will look lame and unmotivated until it is coupled with the doctrine of abstraction considered in the previous section. Since conceptions within intellect really do correspond to the structure of reality, our language can refer to (supposit for) things in the world in virtue of signifying something within intellect.

Universals, inasmuch as they are universal, exist only in the soul. But the natures to which the intention of universality applies exist in the world (*in rebus*). For this reason, the common names signifying those natures are predicated of individuals. (*InDA*, II.12.139–44)

The universal meaning of words, combined with the correspondence between universal natures and natures *in re*, explains how we can use abstract language to talk about particular things. The following passage (quoted earlier in part) makes these connections utterly explicit:

The nature (*ratio*) of anything is what its name signifies – e.g., the nature of stone is what its name signifies. But names are signs of intellectual conceptions. Hence the nature of anything signified by a name is the conception of intellect that the name signifies. This conception of intellect exists within intellect as in a subject, and exists in the thing understood as in the thing represented: for the conceptions of intellects are certain likenesses of the things understood. If, however, the conception of intellect were not made to be like the thing, then that conception of the thing would be false – as if one were to understand to be a stone what is not a stone. Therefore the nature of the stone exists within intellect as in a subject, but exists in the stone as in that which causes the truth in the conception of the intellect that understands the stone to be such. (*De 108 articulis*, prologue 1–17)

Natures exist within intellect, but correspond to things in the world. This correspondence – a ‘likeness’ between concept and object of the sort described in §3 – is what insures the truth (veridicality) of our concepts, and by extension is what insures the truth of language. As for what insures the truth of this correspondence, the last sentence of the passage is revealing. The nature of stone exists within intellect, and also exists in stones in the world. In the world, it is ‘that which *causes* the truth in the conception of the intellect’ – that is, the conception within intellect is the end result of a cognitive process that began with a sensory perception of the stone, and culminated in an abstract representation of the nature of stone. Our reason for being confident that our concepts are true is that we can tell a causal story about how those concepts were generated by the things themselves.

At this point I want to set aside the semantic story introduced in the last three paragraphs, and focus on one implication of the causal story just introduced. The semantic story must be set aside, given my purposes, because this is not a story to which

Aquinas himself made any great contribution. Medieval theories of signification and supposition are among the greatest philosophical accomplishments of the era, but Aquinas here is simply following the lead of others. A detailed discussion of these matters would very quickly take us into the work of thirteenth-century logicians like Peter of Spain and William of Sherwood, and here I will advert to the fine work that has already been done in this area.³⁷

What I wish to discuss instead, and in closing, is a certain aspect of the causal connection between sensation and concept formation. In as much as Aquinas thinks that all causal relationships involve agreement in form, and that likeness too always consists in some sort of formal agreement, he has a quick way of getting from a causal account of our cognitive processes to conclusions about the likeness between concept and object. But though the path may be direct, a serious obstacle stands in the way. For even if Aquinas can describe a causal chain running from the senses all the way to intellect, he has to allow that what the senses apprehend are the superficial sensible qualities of things, not their essences or natures. Given this disparity between the sensory input and the intellectual end-product, the causal story alone is hardly enough to insure the necessary kind of correspondence. Something more needs to be said about how we get from sensible qualities to essences. We have already seen one version of this problem in the previous section, where abstraction turned out to be inapplicable at the level of essences. But the problem spills over into semantics, too, inasmuch as the theory of reference just described requires some kind of correspondence between concept and object.

Aquinas is well aware of the problem, and offers an extremely interesting solution. Rather than insist that we all do somehow grasp the real natures of things, he grants (as we saw earlier) that we do not. All that we grasp, typically, are accidental features of the thing, and in such cases we use these accidents to fix the reference of the term.

Since essential differentiae are unfamiliar (*ignotae*) to us, we sometimes use accidents or effects in their place, as is said in *Metaphysics* VIII [ch. 2], and in virtue of this we name the thing. In such a case, that which is taken in place of the essential differentia is the basis on which the name is imposed. (*QDV*, 4.1 ad. 8)³⁸

Aquinas goes on to use the example of a stone (*lapis*). Following the fanciful lead of Isidore of Seville, he supposes that 'lapis' was imposed on the basis of one of the

37 See, in particular, the extensive discussion of semantics in Krätzmann et al. (1982), and Spade (1996). For Aquinas's own semantic commitments, I am heavily indebted to Klima (1996) and Ashworth (1991). The latter is an excellent source for further references to thirteenth-century literature. For a useful discussion of Aquinas on supposition, see Schoot (1993).

38 Aquinas insists on this point partly because it puts him in a stronger position to explain the meaningfulness of talk about God. If it is generally the case that we manage to talk about things without knowing their essences, then this is not a special problem in the case of the divine names. See, e.g. *ST*, 1a 13.2 ad. 2, 13.8c and ad. 2, and 18.2c.

effects of stones, their hurting the foot (*laedere pedem*). In such a case, even though the accidents or effects fix the reference of the term, they are not the thing signified by the term. It is still the thing's nature that the term signifies, even though it may be the case that no one who uses the term knows what that nature is.

These considerations introduce an important modification into Aquinas's semantic framework. According to that framework, as we have seen, (a) a term signifies the nature of the thing; (b) the term supposits for what has that nature; and (c) the supposition is fixed by the thing's nature (see III *Sent.*, 6.1.3c, as quoted earlier). It now turns out that (c) holds only in certain cases. It holds, he thinks, for sensible qualities, where on his view there is no gap between what the thing is and how we pick it out.³⁹ But when we lack such direct acquaintance, as is the case with the natures of material substances, then (a) that which is signified comes apart from (c) that which picks out the supposition. 'Sometimes, that on the basis of which the name is imposed to signify is different from what the name is imposed to signify' (*ST*, 1a 13.2 ad. 2). The signification or meaning of the term remains the same in such cases, but because we do not have access to that meaning, it must be the case that something else – some accidental feature of the thing – serves to pick out the reference. In this way, Aquinas is able to free his semantic account from worries about how we grasp the essences of things. Even if we never do grasp such essences, still this is what our natural kind terms signify. Meaning, on this account, is divorced from historical facts about how the term was imposed or how language users in fact pick up on the term's reference.

But what then does determine the meaning (signification) of the term? To answer this question, we need to have in front of us a better example of the phenomenon than the one that Aquinas favors. I like to think that the case of the stone is meant to be funny – if not, it is hard to see what value it has as an example. Obviously, *hurting the foot* will not at all do as the sort of placeholder attribute that we use to fix the reference of a natural kind term. Not only are there many other things that can hurt the feet, but of course there are also some stones that feel rather nice to walk on. So whatever it is that we use to fix the reference of 'stone,' it cannot be something like *hurting the foot*. Even if this were plausible as an etymological claim, it would be worthless from the semantic point of view. Aquinas offers a more serious example, however, when he discusses the term 'life.' We base this term, he remarks at *ST*, 1a 18.2c, on 'some sort of external appearance' – that is, on a thing's moving itself. But this kind of behavior is not what it is to live – to live is to exist with such a nature as to be capable of moving itself or (more generally) bringing itself to perform some operation. This is what the predicate 'lives' signifies, even though what fixes the reference of the term in practice is some sort of superficial behavior. It may be a

39 See *ST*, 1a 13.8c: 'Si qua vero sunt quae secundum se sunt nota nobis, ut calor, frigus, albedo, et huiusmodi, non ab aliis denominantur. Unde in talibus idem est quod nomen significant, et id a quo imponitur nomen ad significandum.' This is of course a problematic choice of examples, given the familiar modern debate over the very nature of such so-called secondary qualities.

considerable puzzle to understand just what sort of intrinsic nature a thing must have in order to be alive. But we can use the term ‘life’ all the same, by keying the reference to signs of life that track with reasonable precision – that is, with as much precision as there is in our actual usage of the term – the presence of the underlying nature.⁴⁰

Presumably, with behaviorism long discredited, no one will be tempted to say that the term ‘life’ signifies the superficial behavior. That is not what it is to be alive. Terms like ‘life’ and ‘stone’ signify the underlying nature that explains the superficial behavior and properties of the thing in question. Even without knowing what that nature is, we can use these terms to refer to things of the right kind, as long as we have managed to single out properties that reliably indicate the presence of the nature in question. It is potentially misleading for Aquinas to say, as he often does, that we use ‘accidents’ to fix the reference of terms, because this suggests we are using properties that are only very loosely connected to the thing’s nature. If the term is to capture the extension of the natural kind, then the property used must be a special sort of accident, a *proprium*, something ‘not part of the essence of the thing, but caused by the essential principles of the species’ (*ST*, 1a 77.1 ad. 5). As before, the crucial point for Aquinas is the causal relationship between the nature of the thing and superficial signs that we use to fix the reference of our language. We can talk about the natures of things, even without knowing exactly what they are, in virtue of our being able to describe them through the sensible effects that they produce in the world around us.

This whole scheme works only given a robust kind of realism regarding natural kinds. Aquinas does not think that he needs to introduce abstract, universal properties into the world. They can stay where they belong, in the mind. But for abstract thought to be true, the world must be structured in a certain way. There must be real similarity between members of a kind, and that similarity must be isomorphic with our conceptual scheme. Since the ultimate grounds of similarity within a species are often hidden from us, we must take our cues from what we can observe, and what we can observe must be closely correlated with the underlying essences we wish to understand. On this depends the very meaningfulness of thought and language.

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⁴⁰ Another example of this same procedure would be the one discussed in §3: the way we refer to the genera and species of living things on the basis of their capacities. We do not know what all animals have in common at the level of essence, but we can refer to that common genus in virtue of the sensory capacities that are a sign of animality. [See *ST*, 1a 77.1 ad. 7, quoted in note 28.]

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