

# Aquinas's Abstractionism

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According to St. Thomas, the natures of material things are the proper objects of human understanding.<sup>1</sup> And he holds that, at least in this life, humans cognize these natures, not through innate species or by perceiving the divine exemplars, but only by abstraction from phantasms (*ST* Ia, 84.7, 85.1).<sup>2</sup> More precisely, the human intellect's active component, the agent intellect, produces cognition of the natures of material things by abstracting intelligible forms from phantasms and informing them on its passive component, the possible intellect, to actualize the latter's potency to understand.<sup>3</sup> The aim of the present piece is to clarify Thomas's account of this

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1. Thomas claims only that the natures of things are the *proper* objects of the intellect, not that they are its only objects: he does not deny that we have intellectual cognition also of the contingent states and situations of particular material things.

2. This claim applies to the exercising of concepts already acquired, as well as their initial acquisition (*ST* Ia 84.7). Here and throughout, I use "cognition" to translate "*cognitio*." As Scott MacDonald ("Theory of Knowledge" in *Cambridge Companion to Aquinas*, ed., N. Kretzmann and E. Stump [Cambridge: Cambridge University Press, 1993], p. 162) points out, translating "*cognitio*" with "knowledge" is misleading, given that *cognitiones* can, on Thomas's account, be false (see, for example, *ST* Ia 17.3). I discuss Aquinas's conception of cognition in section I.1.

3. This division of the intellect into an active and a passive component originates in Aristotle's cryptic remark that in the soul "there is a mind for becoming all things" and "a mind for producing all things" (*DA* III 5, 430a10). This passage has been subject to myriad interpretations. Aristotle's Arabic commentators read him as saying that (one or both) of these intellects are single and separate from individual human souls. In opposition to these interpretations, Aquinas holds that the agent and possible intellects are both immanent powers of each individual soul.

intellective abstraction, and thereby the precise force of the conceptual empiricism it asserts.<sup>4</sup> Examining his distinction between sensible and intellectual cognition, and his account of the way the former, in phantasms, supplies the data for intellective abstraction, will lead us to reassess the nature of Thomas's antinativism—arguably the most important historical and philosophical legacy of his cognitive psychology.

In advancing this account, Thomas is insisting that we derive our

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Since these interpretations enjoyed considerable popularity in Aquinas's day, we often find him developing his account of the human intellect in explicit opposition to them (cf. *OUIAA*).

4. Important recent work by several scholars has advanced our understanding of many central aspects of Aquinas's philosophy of mind and epistemology, including his account of intellective abstraction. See Eleonore Stump, "Aquinas on the Foundations of Knowledge," *Canadian Journal of Philosophy* (Supplementary Volume) 17 (1992); "Aquinas's Account of the Mechanisms of Intellectual Cognition," *Revue Internationale de Philosophie* 52 (1998): 287–307; "Aquinas on Sensory Cognition," in *Medieval Analyses in Language and Cognition*, eds. Sten Ebbesen and Russell L. Friedman, volume 77 in the series *Det Kongelige Danske Videnskabernes Selskab, Historisk-Filosofiske Meddelelser* (Copenhagen: Munksgaard, 1999), pp. 377–395. Norman Kretzmann, "Infallibility, Error, and Ignorance," *Canadian Journal of Philosophy* 17 (1992); Kretzmann, "Philosophy of Mind," in *Cambridge Companion to Aquinas*; Robert Pasnau, *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997); and Scott MacDonald ("Theory of Knowledge," in *Cambridge Companion to Aquinas*).

Many of these discussions share a salutary focus on Aquinas's claims regarding the reliability of our faculties, so that their treatments of intellective abstraction tend to center on his *prima facie* wildly implausible claim to its infallibility: "The proper object of intellect is the quiddity of a thing, and this is why intellect is not fallible regarding the quiddity of a thing, speaking of it just as such" (*ST* Ia 85.6). Kretzmann provides an interesting and detailed treatment of this claim. Drawing on a range of texts, he argues that the intellect's apprehension of the quiddity of a thing is such that one acquires an initial, crude concept of that thing, and that this apprehension must be distinguished from the intellect's act of compounding, in judgments, the aspects of things so apprehended: it is only through a fallible, and extended process of making such judgments that we arrive at more adequate concepts of things (see the final section of "Infallibility, Error, and Ignorance"). MacDonald also makes insightful, and complementary, observations along similar lines (pp. 183–84). However, though helpful, these points do not suffice to explain, let alone render defensible, Thomas's claim of infallibility: why can't some of our acts of intellective abstraction yield false cognitions (however rudimentary), in the sense Thomas specifies?: in other words; why can't the agent intellect sometimes produce in the possible intellect forms which do not correspond to the forms that actually inhere, or even could inhere, in material things? I think that Stump is right to take this optimism to be one striking instance of Thomas's general epistemic optimism rooted in his conviction that God designed our cognitive faculties (Stump, "Foundations of Knowledge," pp. 145–48).

The interpretation of his intellective abstraction provided here complements Stump's insight. For it, in effect, elaborates how Aquinas's theistic metaphysics grounds his epistemic optimism about the first operation of our intellect. In particular, it explains how the agent intellect, as the human participating likeness in the divine light of understanding, has the active potency to order phantasms in such a way that it can produce in the possible intellect intelligible species which are determinate likenesses of the particular material things of which we have experience (cf. Section III iv, below).

concepts of material things from our sensible cognition of those things.<sup>5</sup> But it is far from clear just how our senses supply this cognitive content. Many commentators assume that the senses do so in virtue of themselves being informed by the forms which the agent intellect impresses on the possible intellect. These commentators tend to hold that these forms come into the soul from outside through the senses—call this the form-propagation interpretation of his conceptual empiricism.<sup>6</sup> Examining Thomas's accounts of sensible and intellectual cognition will show that the form-propagation interpretation is incorrect. Indeed, it will show that the forms which the agent intellect impresses on the possible—intelligible forms—do not inhere in the senses at all, and that the agent intellect must in abstracting intelligible forms produce a content not present in any sensible cognition. Intellective abstraction thus consists in more than the intellect's precinding from some of the determinate cognitive content—namely, from the individuating material conditions—contained in phantasms.<sup>7</sup>

5. This is clear enough from the way Thomas contrasts his view with other contemporary ones. In particular, he represents his doctrine of intellective abstraction as one which requires rejecting both the Muslim neo-Platonic view that separate intelligences impress intelligible forms on the human intellect and the Platonic view that sensory perception is the occasion for the intellect's construction of intelligible forms merely from itself (*QDA* 10.6, *ST* Ia 84.4; see MacDonald's helpful discussion in "Theory of Knowledge," pp. 181–82).

6. Etienne Gilson contends that intelligible species are "contained" in phantasms, "mixed in with the sensible," so that this abstraction is one in which "a content which is received from outside" is "intellectualized" (Gilson, *The Christian Philosophy of St. Thomas Aquinas*, [New York: Random House, 1956], pp. 218–19, esp. fn. 27). Other proponents of this interpretation include F. C. Copleston (*Aquinas*, [Harmondsworth, Middlesex: Penguin Books, 1965], p. 176), and Robert M. Adams ("Where Do Our Ideas Come From," in *Innate Ideas*, ed., Stephen Stich [Berkeley: University of California Press, 1975], pp. 72–74).

7. Thus, D. W. Hamlyn is wrong to deny that, in abstracting, the agent intellect forms or produces intelligible species (*Sensation and Perception*, [New York: Humanities Press, 1961], p. 48). Peter Geach is closer to the correct reading when, in a brief appendix to *Mental Acts* ([London: Routledge and Paul, 1956], pp. 130–31), he insightfully suggests that the agent intellect in abstracting intelligible species produces content not present in phantasms. Much of what follows is devoted to developing and defending Geach's suggestion. First and foremost, I specify the content which the agent intellect produces in intellective abstraction. Thomas's view, I argue, is that the agent intellect produces certain universal conceptions—most notably, those of being and unity—and realizes them in the determinate content supplied in sense to produce concepts of the determinate being and unity of various material things. I argue, further, that Thomas assigns the agent intellect the role of producing the sensible apprehension of the natures of material things which supplies the sensible data for its intellective abstraction: the agent intellect produces this apprehension by directing our acts of comparing phantasms. Note that Geach gives very little by way of textual support for his reading. He cites two passages, neither of which suffices to establish his reading. In particular, at *ST* Ia 79.3 *ad* 2, Aquinas says nothing to suggest that the agent intellect's operation can be likened to physical light's enabling the eye to see "only if we suppose that colors are generated by kindling the light—that the light is not just revealing colours that existed in the dark" (Geach, *Mental Acts*, p. 130). He says merely that the agent

I argue that appreciating Aquinas's account of how we come, in intellectual abstraction, first to cognize the natures of things requires attending to his identification of the agent intellect with the "connatural light of our souls" (*SCG* II 77 [5]). This light, he holds, is "nothing more than a participating likeness in the uncreated light, in which all the divine ideas are contained" (*ST* Ia 84.6). In these contexts, Thomas speaks of light, not in the sense in which it signifies "that which makes things manifest to the sense of sight," but rather in the extended one on which it signifies "anything which provides illumination for any kind of cognizing" (*ST* Ia 67.1). He refers to the uncreated light, as well as the participating likenesses in this light had by angels and humans, as "*spiritual* light" to convey that this light provides illumination for understanding in much the way physical light provides illumination for seeing (*ST* Ia 67.1; cf. *SCG* III 53). Examining the way in which Thomas develops this light analogy will show that, in identifying the agent intellect with the human participating likeness in uncreated light, Thomas is fitting his Aristotelian-inspired empiricism into his larger, in many respects neo-Platonic, metaphysics of actuality and potency.<sup>8</sup> More specifically, he is aiming to reconcile this empiricism with an Augustinian doctrine of internal illumination, on which God teaches us everything through this light (*ST* Ia 84.5). Appreciating this reconciliation will expand our understanding of the way Aquinas rests his account of human cognition on his metaphysics.

I develop my reading of Aquinas's conceptual empiricism in three sections. In the first, I focus on Thomas's account of sensory cognition, explaining how it is limited to the external accidents of things and does not reach to the natures of things, because it represents things only in images. I conclude, *pace* the form-propagation interpretation, that the intelligible forms which come to inform our possible intellects are not themselves conveyed to the soul in sensation. I also clarify the way in which the senses nonetheless lead the intellect to its cognizing of the natures of things: the senses apprehend the natures of things in images and thereby provide the intellect determinate content for its act of abstraction. In the second section, I examine Aquinas's account of the way the actuality of all acts of understanding (*intelligere*) consists in spiritual light. In doing so, I explain how, on this account, all that one can come to cognize pre-exists in one's intellect. Moreover, I set the stage for examining Aquinas's abstractionism, by sketching how each species of created intellect has its place in the hierarchy of being set by the degree to which its intellect is a participating likeness in the uncreated light of divine understanding. Finally, in the third section, I

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intellect makes phantasms actually intelligible. The other text Geach cites (*ST* Ia 85.2 *ad* 3) also fails to support his reading.

8. See, Norris Clark, "The Limitation of Act by Potency: Aristotelianism or Neo-Platonism," *The New Scholasticism* 26 (1952): 180.

distinguish two roles that Aquinas assigns to the agent intellect in his account of the process by which we come to cognize the natures of material things. First, the agent intellect is indirectly responsible for our senses' achieving an apprehension of the various natures of material things—the apprehension that provides determinate data for this abstraction. Second, the agent intellect abstracts actually intelligible species from phantasms in cognizing the substance underlying the proper accidents the senses cognize in phantasms, through its innate universal cognitions of the being and unity of things. Both of these roles, moreover, are ones of which the agent intellect is capable only in virtue of itself already containing virtually—though to be sure, only in partial potency, so as to require its being augmented with phantasms—the species, which it abstracts from phantasms.

## I. THE LIMITS OF SENSORY COGNITION

### I. Cognitive Species as Form and as Content of Cognition

Aquinas conceives of human intellectual and sensible cognition as consisting in formal assimilation—in the subject of cognition having in its cognitive faculties a form which is a likeness of the object's form. In particular, he holds that a subject cognizes objects insofar as forms inhere in its cognitive faculties and operate as principles of its acts of cognizing. Forms operate as such principles by determining the act of cognizing to produce intentional objects, objects internal to the subject, which are likenesses of the things which are their corresponding external objects. Thomas holds, moreover, that what the subject typically cognizes is the external object, not the internal object: one usually cognizes the external object through the internal object, much as one usually looks at oneself, and not one's image, through one's image in the mirror.

It would be natural, in developing this thumbnail sketch of Thomas's conception of human cognizing, to focus on his claim to be espousing direct realism: Can he both posit an intentional object and avoid representationalism?<sup>9</sup> Answering this question is not, however, crucial to our present purposes. I want to focus instead on bringing out some aspects of his conception of cognition as formal assimilation which will be particularly salient in our subsequent discussions.

Let me begin with a brief point of clarification. The force of Aquinas's claim that the form in the subject of cognition is *like* that in the corresponding object is not to deny that, in cognition, specifically the same form

9. For an interesting discussion of Thomas's direct realism regarding human intellectual cognition, see Kretzmann's "Philosophy of Mind," pp. 140–42.

inheres in the subject and object. It is rather simply to indicate that the form of red does not, insofar as it inheres in a subject as the principle of its cognition, make that subject red in the way in which it makes the corresponding object red (see, for instance, *DV*10.8 *ad*2). Aquinas puts the point in his technical terminology as follows: in seeing a red thing, the subject takes on the form of red only in spiritual or intentional being, and not in natural being (*CDA* II *lec.* 27)<sup>10</sup> I suggest that, in analogous fashion, Thomas's calling the inner object that a subject produces in its act of cognizing a likeness of the object of the cognition merely reflects that it is not, itself, an external object. On this reading, Aquinas does not owe us an account that specifies the relevant respect in which, or degree to which, the form or intentional object of a cognizing must be like its object.<sup>11</sup>

What we need to see is that Thomas distinguishes between two formal likenesses of the object present in a subject of cognition: between the form that operates as the principle of its act of cognizing, on the one hand, and the intentional object produced in that act of cognizing, on the other. Moreover, Thomas remarks that the phrases 'sensible species' or 'intelligible species' can be used to refer to either of these formal likenesses, and so in two senses: (a) to refer to species which inform the senses or the (possible) intellect and function as the principles of acts of sensing or understanding; or (b) to refer to the sensible or intellectual intentions which are the internal objects of these acts (*DV*3.2; *Quodlibeta* 5.2).<sup>12</sup>

10. Thomas's conception of the way in which sensible forms take on spiritual being in sense-perception has received considerable discussion. See John Deely, "The Immateriality of the Intentional as Such," *New Scholasticism* 42 (1968):293–306; S. M. Cohon, "St. Thomas Aquinas on the Immaterial Reception of Sensible Forms," *The Philosophical Review* 91 (1982):193–209; John Haldane, "Aquinas on Sense-Perception," *The Philosophical Review* 92 (1983):233–39; Paul Hoffman, "St. Thomas Aquinas on the Halfway State of Sensible Being," *The Philosophical Review* 99 (1990):73–92; Pasnau, *Theories of Cognition*, chap. 1; and Stump, "Aquinas on Sensory Cognition."

11. Many scholars have taken Thomas's characterization of a cognitive species as a likeness (*similitudo*) of its corresponding object as expressing an iconic view of representation—on which, for instance, a visual species is a colored image. See, for instance, Martin Tweedale, "Mental Representations in Later Medieval Scholasticism," in *Historical Foundations of Cognitive Science*, ed. J. C. Smith (Boston: Kluwer Academic Publishers, 1990), pp. 35–51. Pasnau, *Theories of Cognition*, Chap. 3; and Stump, "Sensory Cognition" and "Mechanisms of Intellectual Cognition," have recently argued against this reading, contending that, in Thomas's sense, A can share a form with B without A's being an eidetic likeness of B. My reading complements the second view by providing an explanation of why Aquinas says that a cognitive species is a likeness of its object, despite not holding an iconic view of representation.

12. Remarking on the ontological status of intentions, Aquinas holds first that they are essential accidents of a cognitive faculty in (second) actuality; they proceed from this actualized faculty as "*actus ex actu*" (*SCG* IV 14 [3]). Second, although intentions are distinct from the substance of a cognitive faculty, there is no real distinction between these internal objects of cognitive activity and that activity itself:

Aquinas often employs 'species' in the first sense. So, for instance, at *SCG* I 53 [2–4] he tells us that humans understand an external thing by having its species (in sense[a]) in its intellect, so that, "once in act through this species as through its own form, the intellect cognizes the thing itself." And, he holds, the understanding is a cognition of that thing, because this species which is its "principle of operation" is a "likeness (*similitudo*) of the thing understood." Proponents of the form-propagation reading of his conceptual empiricism use 'intelligible species' in this sense in ascribing to Aquinas the position that intelligible species come into our souls through sensation.<sup>13</sup>

But Thomas also uses 'intelligible species' in sense (b), to refer to the intentions which the intellect forms in understanding:

We must further consider that the intellect, having been informed by the species of the thing, by an act of understanding forms within itself a certain intention (*intentionem*) of the thing understood, that is to say, its notion (*ratio*) . . . Now, since this understood intention is, as it were, a terminus of intelligible operation, it is distinct from the intelligible species that actualizes the intellect, and that we must consider the principle of intellectual operation, though both are likenesses of the thing understood. (*SCG* I 53 [2–4])

Intellectual intentions, as the internal objects or termini of our understanding, appear, roughly, to be the content of this understanding. Thomas uses '*intentio intellecta*' as synonymous with '*conceptio*' (*DPD* VIII, I). He also speaks of these intentions as 'mental words' or 'inner words' (*SCG* IV 11 [6]) which are signified by the 'outer words' which we speak and write.<sup>14</sup> It will prove important to see that intellectual intentions, or notions, are a particular kind of intention, and are to be contrasted with sensible intentions. For, as we will see in Section I.iii, on Aquinas's account, we can form

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In activities which take place in the agent the object which is the end of the activity is the agent itself: the object in the agent is the activity actually taking place. Thus we read in Aristotle that the sensible actualized is the sense in activity and the intelligible actualized is the intellect in activity. (*ST*Ia 14.2)

Likewise, whereas human intellectual intentions contrast with the divine mental Word in being distinct from the substance of the intellect from which they proceed, Aquinas tells us that in each case "The act of being of the intention understood consists in its very being understood" (*SCG* IV 11 [6]). For a careful study of Aquinas's use of the term 'intentio,' see Robert Schmidt, *The Domain of Logic according to St. Thomas Aquinas* (The Hague: Martinus Nijhoff, 1966).

13. See Hamlyn (*Sensation and Perception*, p. 48) and Adams, ("Where Do Our Ideas Come From?").

14. This is, of course, something like the view of language Aristotle advances in the opening chapter of *On Interpretation*.

intellectual intentions of the natures of things, only in virtue of having already formed sensible intentions of these natures, but it is only in forming intellectual intentions of the natures of things that we cognize these natures. Moreover, that the senses can form intentions of the natures of material things, even though they cannot cognize these natures shows that, on Aquinas's view, one cognizes a thing, not in forming just any intention of that thing, but only in forming an intention which is a formal likeness of that thing.

## II. Sensible Cognition of the Proper and Common Sensibles

Thomas follows Aristotle in distinguishing between the proper, common, and accidental sensibles (*DA* 3.1; 424b 22f; *CDA* 3.1). The proper sensibles are accidental qualities of material things so named because each is the proper object of one of the five external senses: we sense color only through our faculty of sight, sound only through our faculty of hearing, and so on. Indeed, what makes an accidental form the proper, or *per se*, object of a sense is its being the case that the nature of that sense is to generate an intention which is, in respect of that form, a likeness of a material thing, through its being affected by that thing (*ST*Ia 78.3c). The common sensibles, in contrast, are those accidental forms, like shape and motion, which are objects of more than one sense: one can both see and feel a round shape. All of the common sensibles, Thomas holds, are reducible ultimately to extensive quantity and its modifications; and this quantity, in turn, is the primary accident of material things and is the proximate subject of all the proper sensibles (*ST*Ia 78.3 *ad*2). Finally, there are the accidental sensibles, such as Cleon's son. These are the particular material substances which, as the proximate subjects of extensive quantity, underlie all the other sensible accidents as their ultimate subjects. In contrast to both the proper and the common sensibles, the accidental sensibles are only accidentally objects of sense, because their operation is not of itself the proper object of any sense (*CDA* 3.1 [580]). They are, nonetheless, sensible objects, because sense can discern differences among the natures of particular substances through its comparison of different images.

The proper sensibles, Thomas holds, are active qualities that act "first and by their nature" on the external senses; in doing so, they inform the external senses with their formal likenesses and thus cause themselves to be seen. In short, Thomas explains how we come to have the form of proper sensibles as principles of our acts of sensing with a straightforward application of his general, Aristotelian theory of change as the propagation of form: the apple has the form of red and acts by propagating this form to the sense of sight; the form of red received in the faculty of sight, in turn, directs the act of seeing the redness of the apple.

Thomas's account of our apprehension of common sensibles is quite

different from, and rather more complicated than, his account of the proper sensibles. For the common sensibles, on his view, are not active qualities at all and, thus, do not act on a sentient being directly and “by their nature” but only “through the proper sensibles.” On the other hand, they are not sensed *per accidens*, as are the accidental sensibles. To see this, consider that, as the immediate subject of the proper sensibles, common sensibles directly affect the way in which the proper sensibles act on the external senses: the redness of an apple affects us in a certain way because it inheres in the spherical surface of the apple (*ST Ia 78.3 ad 2*). But Thomas holds, again following Aristotle, that none of the external senses discriminate among common sensibles. It is, rather, only through the operation of an inner sense, one which compares the objects of the various external senses, that we discriminate among common sensibles, so that they emerge as distinct objects of our sensing. Take, again, our case of the red apple. Aquinas argues that, if we had only the sense of sight, we could not distinguish the color of the apple from its shape. We are able to sense the shape of the apple as something distinct from its color because its shape also immediately affects the way our other senses are affected and because we can compare the cognitions of our various external senses (*CDA 3.1 [582]*; cf. 2.13 [390]). Thomas names the faculty of inner sense which performs this comparison, one which thus can discriminate between all the various objects of the external senses and compile them to form one coherent whole (*ST Ia 78.4 ad 2*), the common sense. The common sensibles are not sensed *per accidens*, because they are the *per se* objects of the common sense.

As we will see, Thomas holds that we have three other internal senses besides the common: the imagination, the particular reason, and the sense memory. For present purposes, what is crucial is his account of the imagination, because phantasms are the intentional objects of acts of imagining. Thomas holds that the imagination, like the common sense, has the images of things as its object: “the objects of imagination and sense are certain accidents from which the shape (*figura*) or image (*imago*) of the thing is made up” (*DV 10.4 ad 1*). That the imagination has the same objects as the common sense is not surprising, given that the imagination is the inner sense which functions as “a treasure-store of forms received through the senses” (*ST Ia 78.4c*; cf. *QDA 4 ad 2*). Part of the import of the imagination’s being a treasure-store of these forms is that it is capable of employing these forms to produce intentions of objects which are no longer present to the senses, as well of dividing and compounding these forms to produce new intentions, intentions which have objects which we have never seen: he thus describes the imagination as a faculty which “forms for itself a model [*idolum*] of something absent or even of something never seen” (*ST Ia 85.2 ad 3*). Phantasms, thus, consists of images. The senses, thus, must supply the agent intellect with material for its abstraction in the form of images. To begin to see how, on Thomas’s view, these images play this role we need to

attend to his account of the way in which our internal senses apprehend the natures of things, *albeit* without cognizing those natures.

### III. The Senses' Apprehension of the Natures of Things

We have seen that sensible cognition culminates in forming images of things. We will now see that, because one does not cognize a thing's nature merely in forming images of it, the senses cannot cognize the natures of things. Nonetheless, our senses do apprehend the nature of a material thing by apprehending its proper accidents—the range of possible external accidents distinctive of any thing which has that nature. Appreciating this point will clarify what the senses supply, in phantasms, to the intellect for its act of abstracting actually intelligible species from them. It will also put us in a position to see just what this abstraction accomplishes, by clarifying what kind of likeness of a material thing its intelligible species must be.

Thomas is emphatic that, in forming images of things, the senses have yet to “reach” the essence of these things:

(1) The name “intellect” derives from the fact that it has cognition of the intimate characteristics of a thing; for *intelligere* is by way of saying *intus legere* [to read penetratingly]. Senses and imagination have cognition of external accidents only; intellect alone succeeds in reaching a thing's essence. (*DV* 1.12)

(2) What is cognized by intellectual sight are the things themselves, not their images (*imagines*). This differs from bodily (sensitive) vision and spiritual (imaginative) vision.<sup>15</sup> For the objects of imagination and sense are certain accidents from which the shape (*figura*) or image (*imago*) of the thing is made up. But the object of the intellect is the very essence of the thing, although the intellect cognizes the essence of the thing through its likeness, as through a means of cognizing, and not as through an object over which its vision is first carried.<sup>16</sup> (*DV* 10.4 *ad* 1)

(3) Sense is led through it [a form received from things] to a cognition of the external accidents; the intellect reaches to the bare quiddity of the thing, distinguishing it from all material conditions. Thus, when the mental cognizing is said to take its origin from sense, this does not mean that sense apprehends all that the mind cognizes, but that, from those things which sense apprehends, the mind is led on

15. In glossing imaginative cognition with “spiritual vision,” Aquinas is adopting Augustine's terminology: at *ST* Ia 78.4 *ad* 6, he tells us that by “spiritual vision,” Augustine means a sensing “of a bodily likeness in the absence of body,” and that all acts of inner apprehension are instances of spiritual vision in this sense. He does not mean to imply that imagination is not a faculty of inner sense.

16. I take Thomas in this last sentence to be expressing his direct realism about intellectual cognition (cf. Kretzmann, “Philosophy of Mind,” pp. 140–42).

to something more, just as intellectual cognition of sensible things leads to cognition of divine things. (*DV* 10.6 *ad* 2; cf. *SCG* IV 11 [15])

Moreover, even in being formally assimilated to sensible qualities (such as red and cold), sensible cognition does not have the natures of these qualities as its object: thus Aquinas writes that “Cognizing the natures of sensible qualities belongs to intellect, not the sense” (*ST*Ia 78.3c). Thus, the formal assimilation by which we sense a red thing, and the formal assimilation by which we understand it do not differ merely in that sense is of particulars, whereas the intellect is of universals.

Before we take a closer look at the passages extracted above, it will be useful to note that Aquinas does not mean to imply that the senses do not in any way apprehend the natures of things—even the natures of substances. As the first passage suggests, he means to deny only that the senses *cognize* the natures of things. This point is confirmed by Aquinas’s claim (to which we will return in Section III) that we can form intellectual intentions of the natures of material things only in virtue of our having already achieved an apprehension of these natures in sense:

sensing is properly and *per se* of the singular, but yet there is somehow even a sensing of the universal. For sense cognizes Callias not only so far as he is Callias, but also as he is this man; and similarly, Socrates as he is this man. As a result of such an attainment pre-existing in sense, the intellectual soul can consider man in both. But if it were in the very nature of things that sense could apprehend only that which pertains to particularity, and along with this could in no wise apprehend the nature in the particular, it would not be possible for universal cognition to be caused in us from sense-apprehension. (*CPA* I *lec.* 20)

Since he here clearly asserts that the senses do, in some way, apprehend the natures of material things, charity requires that we not read (3) as denying that the senses have any apprehension of these natures. The “something more” that the intellect apprehends, and which the sense does not, is not the nature of a particular material thing. As we will see, it is, rather, the nature of being itself and, thereby, the nature of material substance as what underlies the sensible accidents of a thing.

So what makes a sensible intention of the nature of a material thing a mere apprehension, and not a cognition, of that nature? Aquinas’s answer, in outline, is as follows: an intention constitutes a cognition of a nature only if it is a formal likeness of a nature; any formal likeness of a nature must be a formal likeness of a substance; a sensible intention is not a formal likeness of a substance; it is thus not a cognition of any nature.

This answer is implicit in the way (2) and (3) connect the claim that senses and the imagination do not cognize the natures of things with their cognizing only the external accidents of material things. This connection

reflects Thomas's view that implicit in a cognition of the nature of an accident—an understanding of that accident—is the cognition of the nature of the underlying substance on which that accident depends—an understanding of that substance. For example, the definition of color specifies a surface of a body, and that of a surface, a body; thus, we cannot come to understand sensible accidents, without also thereby understanding the corresponding substance in which it inheres, that is, body. Now the content of a sensible intention of the nature of a material thing consists in the proper accidents of that thing—the external accidents which are distinctive of all those things which share that nature. As we shall see in Section III.iii, Thomas holds that we are able to form such intentions only through our particular reason, a faculty which compares phantasms. For the present, the crucial point is that such an intention is a formal likeness, not of the substance of the thing, but rather only of its external accidents. This reading also explains why (1), (2), and (3) all contrast representing things in images with cognizing their natures: images are formal likenesses only of external accidents; in apprehending successions of images distinctive of a certain nature, we apprehend that nature, but do not cognize it.

In short, Thomas holds that only the intellect can cognize the natures of things, including the natures of the sensible accidents, because only it can be formally assimilated to substances, and not just to external accidents. In deriving any intelligible form from phantasms—even the intelligible forms of a material thing's sensible accidents—the intellect goes beyond what is apprehended in sensibility, insofar as it produces a form which is a likeness of substance and, in the case of a thing's sensible accidents, a formal likeness of the way in which these forms inhere in a substance, as well.

Notice the claim in (3) that the intellect is led to the natures of things through images, as sense is led to cognizing the external accidents of things in its images of things through the forms which it receives from them. Through our sensible apprehension, in phantasms, of the possible range of images proper to, and so distinctive of, the nature of a material thing, our intellect can arrive at a cognition of the substance underlying its external accidents, and thereby cognize the quiddity that constitutes that thing itself.

Because substantial forms in themselves are unknown, but become known to us by their proper accidents, substantial differences are frequently taken from accidents instead of from the substantial forms which become known through such accidents. (*OSC* 11 *ad* 3)

And, as his remark that the primary mark of the essence of a thing is its shape (*DV* 10.5c) suggests, the crucial content of our apprehension of proper accidents consists of determinate common sensibles.

In short, Aquinas maintains that there is a parallel between on the one

hand the successive metaphysical layers of a material thing—its sensible secondary accidents, its primary accident of quantity (as signing corporeal matter), and its substance ‘standing under’ the first two—and on the other the corresponding human cognitive faculties—the external senses, the internal senses, and the intellect. Indeed, we will see in Section III that, much as the common sense is lead to the common sensible forms of material things through its comparison of the proper sensibles apprehended in our external senses, so too our intellect is lead to the intelligible forms of things through the particular reason’s comparison of the images apprehended in our common sense and stored in our imagination.

Note, finally, how the points adduced in the present section tell against the form-propagation interpretation of Aquinas’s conceptual empiricism. Indeed, only our sensory cognition of the proper sensibles is adequately explained in terms of the propagation of forms. For the only forms which, in sensation, are *directly* propagated into the soul are those of the proper sensibles. The common sense must generate the forms of the common sensibles by comparing the intentions of proper sensibles.<sup>17</sup> Since only the sensible forms of the proper sensibles are received directly in sensation, the agent intellect’s abstraction of intelligible forms from phantasms is not one in which it simply separates an intelligible form received directly in sense cognition from the material conditions with which it is mixed in. Moreover, since the sense and the imagination are restricted to representing things in images and thus cognize things merely in respect of their external accidents, sensible intentions are not formal likenesses of the natures of material things either; because these faculties cannot generate intentions which are formal likenesses of substances, they cannot generate any formal likenesses of the natures of accidents. In order to generate any actually intelligible species from phantasms, the agent intellect must derive from them a formal likeness of the substance of things, a form which is not itself apprehended by either our sense or our imagination.

## II. THE HIERARCHY OF SPIRITUAL LIGHT AND THE NATURE OF THE INTELLECT

The aim of the present section is to sketch Aquinas’s conception of the intellect, the power to cognize the natures of things. Since the nature of a thing is the inner principle (*principium*) that determines its distinctive manner of being, the intellect is the power to form an intention which is a

17. To be sure, as we have seen, our intentions of proper sensibles contribute to the common sense’s production of the forms of the common sensibles, so that we can speak of these forms as coming to the common sense through our sensing of the proper sensibles. But this is no longer the simple form-propagation model.

determinate likeness of a principle which constitutes the nature of a thing. Thomas develops this conception in the framework of his theistic metaphysics. On this metaphysics, God's essence is to be, and the essence of every other being consists in a distinctive way of participating in God's act of being. Moreover, the essence of a created intellect consists in the distinctive way in which it participates in God's power of understanding. And since God's power of understanding consists in uncreated spiritual light, the power of any created intellect consists in a participating likeness in the uncreated light. Created intellects form a hierarchy under the divine intellect which is determined by how nearly these intellects' spiritual lights resemble the uncreated light. The resulting sketch of Aquinas's conception of the intellect will prepare us for examining his account of the way in which the agent intellect, as the human participating likeness in the uncreated light, consists in the power to abstract actually intelligible species from phantasms.<sup>18</sup>

To understand the hierarchy of intelligences, one needs to see how, following Augustine, Aquinas holds that God gives things existence in two modes of being:

As Augustine says in the *De Genesi ad litteram*, the things which pre-existed from eternity in the divine Word flowed forth in two ways: one way in the angelic intellect; another way that they subsisted in their own natures.<sup>19</sup> (*ST* 56.2; cf. 55.2, 57.2, and *QDA* 18c).

The mode of being that things have in intellects, Thomas calls "*esse intelligibile*," that whereby they subsist in their own natures, "*esse naturale*" (*ST* Ia 56.2).<sup>20</sup> The former is the intentional being that these things take on as the internal objects of created acts of understanding. We will see that the brighter a creature's spiritual light, and thus the more it resembles the uncreated light, the more the way in which things exist in its understanding resembles the way these things pre-exist in the divine Word. It thereby also determines a created intellect's place in the hierarchy of created intellects, for this hierarchy is determined by the degree to which the distinctive way in which creatures understand things approaches that of God.

I turn, then, to Aquinas's account of the hierarchy of spiritual light, beginning at the top, with the way in which the uncreated spiritual light constitutes divine cognition.

18. For a helpful general discussion of Aquinas's account of divine cognition, see Eleonore Stump and Norman Kretzmann, "God's Knowledge and its Causal Efficacy," in *The Rationality of Belief and the Plurality of Faith*, ed. Thomas D. Senor (Ithaca: Cornell University Press, 1995), pp. 94–124.

19. *Dicendum quod sicut Augustinus dicit, ea quae in Verbo Dei ab aeterno praeexisterunt dupliciter ab eo effluerunt: uno modo in intellectum angelicum; alio modo ut subsisterent in propriis naturis.*

20. Piana has "*intellectuale*."

## I. Uncreated Spiritual Light

God is "pure actuality both in the order of existence and in the order of understanding" (*ST Ia 14.2 ad 3*). Indeed, since there is no real distinction between God's *esse* and *intelligere*, these two orders merge at the top. Moreover, because God's *intelligere* is not limited by a intelligible species or essence really distinct from that act itself, it is pure and infinite: the divine, uncreated spiritual light is pure and infinitely bright (*CBDT 1.2c*).

Aquinas holds that all things pre-exist supersubstantially in God, in accordance with his own simple *esse* (*ST Ia 57.1c*). They do so, not merely in that they are archetypically caused by God as imperfect and limited participating likenesses of his *esse*, but also in that God cognizes them, having ideas (*rationes*) of them according to which he creates them (*ST Ia 15.1c*).

These ideas are *that which* God cognizes, not species or forms *by which* God cognizes. Since he is simple, the only form *by which* God cognizes is his essence. Nonetheless, through his essence, God understands not only himself, but also all other things, because the essences of all other things are simply various ways of participating in God's being; God's self-cognition thus contains the divine ideas of all possible things (*ST Ia 15.1c*).

Thomas speaks of these divine ideas as "contained in the uncreated light" (*ST Ia 84.5c*). Understanding this image requires seeing how Aquinas restricts his analogy between physical and spiritual light: although physical light is the source (*principium*) of color, because color is caused, not solely by physical light, but by different dispositions of the media which receive it, it contains color only generally, not specifically, in its diversity and plurality. In contrast, the uncreated light, as the sole cause of all the perfections of creatures, contains them specifically and distinctly "in an eminent degree" (*ST Ia 14.6*; cf. *55.2 ad 1*; *84.2*). Aquinas illustrates this eminent containment by likening it to the way the number 6 contains the numbers 2 and 3 (*ST Ia 14.6*).

## II. Created Spiritual Light

In Aquinas's view, created intellects also consist of spiritual light, but are finite, dim, and imperfect participating likenesses in God's uncreated light. As natural *esse* is limited and multiplied by inherence in essences, so spiritual light, as intelligible *esse*, is limited and multiplied by inherence in the essences of intellectual substances. And, as mentioned earlier, what determines the hierarchy of created intellectual substances is the strength of their respective participating likenesses in God's uncreated light and, consequently, the degree to which their manner of understanding resembles God's.

**1. Angelic Spiritual Light.** Unlike God, angels need intelligible species in addition to their own essences in order to understand other things. But, like God, they properly represent many things through each of these intelligible species. These intelligible species are universals which are capable “in their unity” of representing “the distinct and proper nature” of a diversity of things (*ST Ia 55.3 ad 3*).<sup>21</sup> This requires that these species not be derived by abstraction from its objects, so as to “take their measure from the thing they represent” (*ST Ia 55.3 ad 3*; cf. *DV 3.5, QDA 20*). They must, rather, be universals which “pre-exist before the things” cognized, “either in the order of causation, as universal ideas of things are in the Divine Word, or at least in the order of nature, as universal ideas are in angelic intellects” (*ST Ia 55.3 ad 1*).<sup>22</sup>

The hierarchy of angelic understanding is based on how nearly angels emulate the way God understands everything in the divine “primal unity” (*uni primo*) (*ST Ia 55.3*). The more universal its innate species, and thus the fewer such species it requires to understand everything (in first actuality), the more like God it is (*ST Ia 55.3*; cf. *QDA 18, ST Ia 89.1*).<sup>23</sup> And the sort and number of species it requires is determined by how strong their participated spiritual light is:

In all intellectual substances the intellectual power comes from the influence of the divine light. Now this in its primal source (*primo principio*) is one and simple; and the further intellectual creatures are from this source the more the light will be divided and diversified, as with lines radiating from a center. Thus God, by his one essence understands all things. The superior intellectual substances, though they understand through more than one form, nevertheless do so through forms which are fewer, more universal, and more powerful in comprehending things, because of the strength of their intellectual power; in the inferior, however, the forms are more numerous, less universal, and less powerful in comprehending things, because their intellectual powers fall short of those of the superior. (*ST Ia 89.1*)

Moreover, Aquinas continues,

If lower substances had forms with the universality that higher ones have, then they would not, because they do not have the same efficacy in understanding, receive through them a perfect cognition of things, but a general and confused cognition.

21. These universals, moreover, are capable of representing things both in their general natures and in their singularity (*ST Ia 57.2*).

22. *Vel secundum ordinem causae, sicut universales rerum rationes sunt in Verbo Dei, vel saltem ordine naturae, sicut universales rerum rationes sunt in intellectu angelico.*

23. Notice how this hierarchy employs a Platonic conception of knowledge as consisting in the grasp of the way things stand in interrelation to the whole.

Notice that, on Aquinas's view, a creature does not understand a thing simply in virtue of possessing an intelligible form that represents it, but in virtue of possessing spiritual light, or *intelligere*, sufficient (in conjunction with an intelligible form), to form an intellectual intention which is a distinct likeness of that thing (cf. Section I.1). In short, understanding consists in participated intelligible *esse*, just as subsistence consists in participated natural *esse*. And, in providing creatures with spiritual light, God supplies all *intelligere* for the order of understanding, just as he provides all natural *esse* for the existence of creatures.

**2. Human Spiritual Light.** Aquinas holds that human spiritual light, too, is had by participation in the divine light. He invokes this position in subscribing to the Augustinian doctrine of divine illumination:

something [may be] cognized in another as in a source (*principium*) of cognition; as we say that things seen by sunlight are seen in the sun. In this sense we must say that the human soul cognizes everything in the divine eternal ideas (*rationibus*), and that by participation in them we cognize everything. For the intellectual light in us is nothing more than a participating likeness in the uncreated light, in which all the divine ideas are contained. (*ST Ia* 84.5).

Moreover, he holds that the agent intellect, as the human participating likeness in the uncreated light, constitutes all of the actuality of its acts of understanding (*CBDT* 1.3; *ST Ia* 84.5).<sup>24</sup> In particular, Aquinas insists that, in producing intelligible forms in the possible intellect to actualize its potency to understand, this light supplies the actuality of the resulting *intelligere* or acts of understanding (*QDA* 4 *ad* 6). Thus, spiritual light constitutes the actuality of all human acts of understanding, as divine and angelic spiritual light constitute, respectively, the actuality of divine and angelic acts of understanding.

At the same time, by identifying this spiritual light with the agent intellect, Aquinas uses his hierarchy of spiritual light to motivate an Aristotelian conceptual empiricism: he contends that, our light being the weakest and most diffuse of all, were we to understand "in the mode proper to separate substances," we "would not have perfect, but confused and general cognition"; our spiritual light is too dim to illumine any nonabstracted intelligible forms, no matter how limited their range, in such a way as to grasp distinctly the natures represented generally in these species (*ST Ia* 89.1; *QDA* 18). Indeed, to achieve the cognition proper to our intellects, our souls must be joined to a body so that the resulting composite (in particular,

24. Thus, he tells us that in its separated state, the soul "will receive through its possible intellect species flowing from higher substances, and through its agent intellect it will have the power to understand" (*QDA* 15 *ad* 7). Furthermore, he adds, because the species through which it understands in this state are too universal for its natural light to suffice, the separated soul has merely a confused and imperfect cognition.

the imagination) can present phantasms from which our spiritual light—the agent intellect—can abstract intelligible forms suitable to our feeble intellects. As a result of this conjunction, the intellect naturally converts (*convertio*) to these phantasms, and the agent intellect employs these phantasms to produce an intelligible form in the possible intellect, thereby realizing the possible intellect's potency to understand.<sup>25</sup>

Human spiritual light thus has a natural operation unique in the hierarchy of intellects: the function of producing, by abstraction from phantasms, intelligible forms (*QDA* 4). The divine light, having no need of intelligible forms distinct from the divine essence, does not have this function. Angelic spiritual light has no such function either: because God creates each angel with the innate intelligible forms that perfect its potency to understand, producing such forms by abstraction from phantasms is not a natural operation of its intellect.

Although the natural operation of spiritual light in human cognition differs in this fundamental respect from that in angelic cognition, the continuities between them will prove crucial to understanding Aquinas's account of the agent intellect. We will see, in particular, that both of these natural operations are ones in which spiritual light can produce distinct likenesses of the natures of things only in virtue of these likenesses being virtually contained in it, in a way analogous to that in which the divine ideas are contained in the uncreated light: created spiritual light can produce a likeness of the distinctive way in which a created thing participates in divine being, only in virtue of being itself a participating likeness in the divine spiritual light. And the natural operations of created intellects differ from that of the divine in needing to be supplemented by some determinate likeness of things in order to produce determinate likenesses of the natures of created things. In these respects, seeing how the human intellect falls at the bottom of a hierarchy of created intellects will prove helpful in interpreting Aquinas's account of the agent intellect. Indeed, it will help clarify how, by identifying the agent intellect with the human share in spiritual light, and spiritual light generally with the actuality of *intelligere*, Thomas combines an Augustinian theory of internal illumination and an Aristotelian conceptual empiricism within his metaphysics of act and potency.

### III. Thomas's Conception of Understanding

In examining Thomas's hierarchy of intelligences, we have, in effect, confirmed and developed the schematic reading of his conception of under-

25. See, for instance, *QDA* 18 *ad* 1, where Aquinas speaks of the possible intellect's gaze (*aspectus*) being fixed on lower things as a result of its union with the body. Aquinas goes on to note that, once separated from the body, the human intellect turns its gaze to higher things and cognizes in an angelic mode.

standing presented at the opening of the present section. On this reading, Aquinas holds that to cognize a thing's nature is to form an intention which is a determinate likeness of that nature—the principle which determines the distinctive way in which that thing has its being. We have seen that, on his theistic metaphysics, the nature of any created thing consists in the distinctive way in which that thing participates in divine being, because God is the being whose essence is to be. Cognizing the nature of a created thing consists in having spiritual light insofar as this light constitutes an intention, which is a likeness of the way in which that thing is an imperfect participating likeness in the divine being.

The uncreated light, as a perfect grasp of the divine essence, constitutes an intention which is a distinct and proper likeness of the natures of all created things; it thus eminently contains the ideas of all created things, ideas which serve as the archetypal principles according to which God creates these things. Created spiritual light is itself a participating likeness in the divine light, and thus is the right kind of thing to constitute a formal likeness of the way in which a thing is a possible imperfect participation in divine being, and thus an intention in and through which one cognizes the nature of a thing. This explains why Aquinas infers from the intellect's being incorporeal, that it naturally cognizes natures: immaterial intentional being is a participating likeness in the divine act of understanding, *intelligere*, which eminently contains the divine ideas, perfect formal likenesses of the inner causes of all possible created things.<sup>26</sup> It also explains why the senses, as corporeal powers, have their cognition restricted to the external accidents of material things. And it follows, moreover, that a created intellect cognizes a thing's nature by participating, however faintly and imperfectly, in God's grasp of the way in which that thing participates in divine being.<sup>27</sup> In explicating Aquinas's account of intellectual abstraction, we would do well to attend to how it specifies the distinctive manner in which human cognizing of the natures of things participates, through the light of the agent intellect, in the divine cognition of the natures of things.

26. Thomas holds that the intellect's being a capacity of cognizing natures is a natural consequence of its incorporeality. So, in characterizing the two cognitive powers of our soul, he writes:

One is the act of a corporeal organ, and it is natural for it to have cognition of things as they exist in individuating matter, which is why sense has cognition only of individuals. But the soul's other cognitive power is intellect, which is not the act of any corporeal organ. And so through intellect it is natural for us to have cognition of natures. (*ST* Ia 12.4c)

27. This point lies behind Aquinas's claim that only intelligences are created in God's image (*ST* Ia 93.2, 3, 6c; cf. Stump's helpful discussion of these passages in sec. IV of "Foundations of Knowledge.")

### III. SPIRITUAL LIGHT AND THE PRODUCTION OF ACTUALLY INTELLIGIBLE SPECIES

In Aquinas's terminology, an object is actually intelligible, insofar as it is actually capable of acting on our possible intellect, so as to actualize its potentiality to understand—just as an object is actually visible, insofar as it is actually capable of acting on our sense of sight, so as to actualize its potentiality to see (*ST* Ia 70.3c, 4c; *QDA* 4; *CDA* III, 10 [730–31]; *DV* 10.6c). The agent intellect's role in generating our cognition of the natures of material things from our sensible cognition of these things is, most generally, that of making sense-perceptible things actually intelligible:

When our mind is considered in relation to sense-perceptible things that exist outside the soul, it is found to be related to them in two ways. It is related to them in one way as actuality to potentiality—insofar as things outside the soul are potentially intelligible and the mind itself is actually intelligible. It is in this respect that we say that in the mind there is agent intellect, which makes things actually intelligible. It is related to them in the other way as potentiality to actuality—insofar as the determinate forms of things, which exist actually in things outside the soul, are in our mind only potentially. It is in this respect that we say that in our soul there is possible intellect, which has the function of receiving the forms abstracted from sense-perceptible things and made actually intelligible by the light of the agent intellect. (*DV* 10.6c)

And the agent intellect makes sense-perceptible things intelligible by deriving their determinate forms from our sensible cognition of them and making these forms actually intelligible. Sense-perceptible things supply the determinate forms of things, our mind, the actual intelligibility of these forms.

Notice that Thomas explains the agent's intellect's capacity to make things actually intelligible by reference to its being the respect in which the mind itself is actually intelligible. Now the mind is itself actually intelligible insofar as it is capable of cognizing itself. And, on Thomas's view, the mind cognizes itself through its own act of cognizing:

our intellect understands itself according as it is made actual by species abstracted from sensibles through the light of the agent intellect, which is the actuality of intelligibles and by means of them, also of the possible intellect. Therefore our intellect cognizes itself, not by means of its own essence, but by means of its activity. (*ST* Ia 87.1c)

As what constitutes the actuality of all our acts of understanding, the agent intellect also constitutes the actual intelligibility of our mind. Thomas's

claim, then, is that the agent intellect is capable of making sensible forms actually intelligible only because it is itself essentially actually intelligible. That the light of the agent intellect is in this way essentially actually intelligible, should not be surprising, given that this light is itself our participating likeness in the uncreated light, which is essentially self-cognizing. Indeed, it will emerge that the agent intellect can make sensible forms actually intelligible only in virtue of its containing virtually, as a participating likeness in the divine light, cognition of the divine being, which as we saw, itself eminently contains the natures of possible created things.

In examining Thomas's account of the way the agent intellect makes the forms of things actually intelligible we need to see how he distinguishes two aspects to its activity:

Phantasms are illuminated by the agent intellect and, further, by its power, species are abstracted from them. They are illuminated because, in proportion as the sensible part is made more powerful by its conjunction with the intellect, phantasms by the power of the agent intellect are rendered apt to have intelligible intentions abstracted from them. The agent intellect, moreover, abstracts species from phantasms, in that by its power we can consider the specific natures without individuating conditions, according to whose likenesses the possible intellect is informed. (*ST Ia 85.1 ad 4*)

The first aspect is the agent intellect's illumining of phantasms. As we will see, Aquinas says that this illumination is proportionate to the sensible part of the soul being made "more powerful by its conjunction with the intellect," because he holds that the agent intellect augments the power of our sense, so that it is capable of an induction which produces sensible apprehensions of the natures of material things. Through this heightened sensible power, which Thomas terms the particular reason, the agent intellect illumines phantasms, insofar as it produces an ordering of phantasms which captures the proper accidents of a material thing. The second aspect is the agent intellect's production, by abstraction from the illumined phantasms, of an intelligible form in the possible intellect, a form through which the possible intellect cognizes the quiddity of a material things.

But before discussing these two aspects of intellectual abstraction, we need to have before us a sketch of Thomas's conception of human *scientia*. For this conception forms the framework within which he develops his account of both these aspects of intellectual abstraction. Indeed, intellectual abstraction is itself the initial stage of an overall process whose end is the production of human *scientia*. And the agent intellect functions as the principal agent throughout this overall process only in virtue of its containing all *scientia* virtually in its light.

## I. Scientia and our Cognition of its First, Immediate Principles<sup>28</sup>

On Thomas's view, the power of spiritual light is most generally one which generates cognition of the causes of things. The causes in question include the formal, material, or final, as well as the efficient, so one should think of a cause (*causa*) in the relevant sense as an explanatory factor. Moreover, the end to which the power of spiritual light is directed is *scientia*—cognition of the systematic and necessary explanatory relations in which things generally stand in virtue of their natures. Whereas God and the angels have such cognition *ab initio* in acts of simple intellectual apprehension, we must use our spiritual light to generate this cognition discursively—through reasoning, a process of comparing intentions to arrive at new intentions (*DV* 15.1c). Two types of reasoning, demonstrative and inductive, are both indispensable to the process by which our spiritual light generates *scientia*: whereas induction proceeds from sensed particulars to the cognition of their universal natures, demonstration proceeds from universal intellectual intentions to yield the cognition of the systematic explanatory interconnections among things which constitutes *scientia* in the proper sense.<sup>29</sup>

In Thomas's account, demonstrative reasoning proceeds by way of demonstrative syllogisms, in which a conclusion is drawn from two premises, each of which is better known than the conclusion (*CPA I lec. 6, 17*). Through such syllogisms, we acquire *scientia* in the proper sense, by developing an understanding of the ways in which things, in virtue of their natures, stand in a system of necessary interconnections.<sup>30</sup> Demonstrative reasoning presupposes cognition of principles which cannot themselves be demonstrated, propositions whose truth must be self-evident to us. An example of such a principle would be the proposition, 'The whole is greater than its part' (*CPA I lec. 5*). Thomas terms these propositions the first, immediate principles of our demonstrative reasoning, and thus of our *scientia*. They are immediate because, being indemonstrable, they are not

28. The present section is heavily indebted to insightful discussions of Aquinas's conception of *scientia* by Stump ("Foundations of Knowledge," III) and by MacDonald ("Theory of Knowledge").

29. See *CPA I lec. 30*. *Scientia* has as its subject matter the causes of things (*CPA I lec. 4, 13, 42*). Because the reasoning through which we perfect *scientia* proceeds through universal intentions (*CPA I lec. 11, 16*), properly, we have *scientia* only of universals, not individuals (*CPA I lec. 44*).

30. MacDonald explains how, on Aquinas's view, paradigmatic *scientia* (such as geometry) is the product of explanatory demonstrations—demonstrations in which the epistemically first principles are also metaphysically first principles—whereas factual demonstrations yield nonparadigmatic *scientia* (such as theology) because they do not capture explanations from metaphysically prior facts ("Theory of Knowledge," VI). Our *scientia* of the natures of material things, in particular, must be non-paradigmatic, because we can cognize these natures only from their effects—that is, their sensible accidents (cf. I.iii, above).

cognized in a demonstrative syllogism, through the intermediate term in that syllogism, but are rather cognized solely through the terms which make them up: this is the sense in which they are self-evident. These principles are termed first, relative to the propositions which are cognized by demonstration from them (*CPA I lec. 4, 7*).

The first, immediate principles of *scientia* are of two kinds, common and proper. A common first principle is so called because it is a first principle common to all our *scientia*, as the law of non-contradiction is. Aquinas holds that our cognition of these principles is innate. A proper first principle of demonstration, in contrast, is a first principle proper to our *scientia* of some determinate thing. These principles, such as the proposition that every man is an animal, are propositions that explicate the real natures of things, by expressing the essential constituents of these natures. Like the common, the proper principles are immediate; we cognize them merely through the universals which make up their terms. However, we cognize the universals that make up the terms of proper principles only by abstracting them from our sensible cognitions and thus only through induction over particulars—that is, through the comparison of different material things as they are presented to us in our sensible cognition (*CPA I lec. 20, 30*). Thus, insofar as we derive our cognition of their terms from our sensible cognition, our cognition of the proper principles is not innate in us. Our cognition of the common principles, in contrast, derives solely from our participating likeness in the uncreated light, and thus does not depend on our sensible cognition in the way our cognition of the proper principles does. The demonstration which yields our *scientia* in the proper sense starts from proper sensibles (*CPA I lec. 17*), so that our *scientia* depends on our cognition of the proper principles and thus on the abstractive process which yields our cognition of the proper objects of our intellect, the natures of material things.

## II. Our Innate Cognition of the First Concepts of the Understanding

Aquinas's conception of the way our cognition of the common principles is innate in us is crucial to his account of this intellect's role, not only in demonstration, but also in the induction and intellectual abstraction which yield our cognitions of the natures of determinate material things. For it will emerge that the concepts which make up the terms of the common principles, and which thus must also be innate in us, are innate in us in such a way that they are implicit in the induction and abstraction which yield our cognitions of the natures of determinate material things. These concepts, which Thomas terms the first concepts of the understanding, include that of being, "the first concept in our intellect" (*CPA I lec. 5*), as well as the concepts of unity and truth. Thomas terms these concepts the first concepts

of the understanding because, as we will see, he holds that all other universal principles derive from them, so that they are first relative to all other universal principles. We cognize the first concepts of the understanding immediately in the sense that we do not cognize them through anything else—they are cognized *per se*, in the same way in which the proper and common sensibles are cognized *per se* (*ST*Ia 87.1 *ad* 1).

Thomas holds that the common principles—“the first principles whose cognition is innate in us”—are “certain likenesses of uncreated truth”:

The first principles whose cognition is innate [*innatus*] in us are certain likenesses of uncreated truth.<sup>31</sup> When we judge about other things through these likenesses, we are said to judge things through unchangeable principles or through uncreated truth. (*DV* 10.6 *ad* 6)

He holds, moreover, that these principles are evident to us through the light of reason:

The light of reason through which such [inborn and self-evident first] principles are evident to us is implanted in us by God as a kind of reflected likeness in us of the uncreated truth. (*DV* 11.1c)

The common principles are likenesses of uncreated truths, because they are truths about being, unity, and truth in general, and these transcendental truths reflect the nature of God, who is himself being, unity, and truth. The agent intellect’s being itself a reflected likeness in the divine act of understanding, explains how the common principles are themselves immediately evident through its light. Indeed, it also explains how, in being evident through the light of the agent intellect, the common principles are, nonetheless, self-evident; recall, in this connection, that the agent intellect itself, insofar as it constitutes the actuality of all our *intelligere*, also constitutes the mind’s actual intelligibility.

Now in claiming that cognition of the first common principles is innate in us, Thomas is not claiming that we actually cognize these principles at birth—even in first actuality. He is claiming, rather, that this cognition is

31. The force of Thomas’s characterization of these principles as “certain likenesses of uncreated truth” is clarified by the following difficulty to which the passage cited in the main text is a response:

Augustine says that our mind judges about bodily things through non-bodily and eternal principles. But principles received from the senses are not of this kind. Therefore, it seems that the human mind does not receive cognition from sensible things. (*DV* 10.6 difficulty b)

The first principles in question, then, are likeness of uncreated truth in such a way that they are not likenesses of material things. It follows that they are not the proper first principles of our *scientia*. They must, rather, be the common principles.

contained virtually in the light of the agent intellect. To see what this containment amounts to, consider first his claim that the first concepts of the understanding “pre-exist in us”:

Certain seeds of *scientia* pre-exist in us, namely the first concepts of the understanding, which by the light of the agent intellect are immediately cognized through the species abstracted from sensible things. These are either complex, as axioms, or simple, as the cognitions of being, unity, and so on, which the intellect apprehends immediately. From these universal principles, however, all principles follow, as from certain seminal principles. When, therefore, the mind is led from these universal cognitions to the actual cognition of the particular things, which it cognized in potency, and as it were in the universal, then one is said to acquire *scientia*.<sup>32</sup> (*DV* 11.1)

As his characterizing the first concepts of the understanding as “seeds of *scientia*” suggests, Aquinas holds that *scientia* proper grows out of our application of these concepts in demonstrative reasoning. But our present concern is primarily with the way these first concepts of the understanding “pre-exist in us.” The pre-existence in question is virtual, that is, one in the efficient cause whose operation brings about actual existence:

An effect, before it is actually produced, pre-exists virtually in its efficient causes but not actually, which is to exist absolutely. In like manner, before it is drawn out of demonstrative principles, the conclusion is pre-cognized virtually, although not actually, in its self-evident principles. (*CPA* I *lec.* 3)

Now the efficient cause that actually produces the first concepts of the understanding is the agent intellect; it does so in its act of intellectual abstraction. Our intellect immediately cognizes the first concepts “by the light of the agent intellect” and “through the species abstracted from sensible things.” Thomas’s position, then, is that the first concepts of the understanding pre-exist virtually in the power of the agent intellect.

But what makes our cognition of the first concepts of the understanding, as well as the common principles which they make up, innate is its pre-existing simply in the agent intellect, our power to understand. Indeed, this cognition makes up the intrinsic principle of our power to

32. Thomas holds that the mind acquires *scientia* through demonstration. Thus, the process described in the last sentence of this passage—that whereby the mind is led from the first concepts of the understanding to actual cognition of particular things—is one that presupposes the products of intellectual abstraction, and not itself the process of intellectual abstraction. Indeed, as the first sentence makes clear, it is in intellectual abstraction that the mind has immediate cognition of these first concepts, in realizing them in its cognition of natures of material things.

understand. In Aquinas's terminology, these concepts pre-exist as an "active and completed" potency:

In natural things, something can pre-exist in potency in two ways. In one, it is an active and completed potency, as when an intrinsic principle has sufficient power to flow into perfect act. Healing is an obvious example of this, for the sick person is restored to health by the natural power within him. The other appears in a passive potency, as happens when the internal principle does not have sufficient power to bring it into act. This is clear when air becomes fire, for this cannot result from any power existing in the air. (*DV*11.1)

Thomas holds that there are cases of active and completed potency which require some external agency—for instance, the natural power of a patient which requires medicine in order to restore the patient's health, or a pupil's intellect which requires the aid of a teacher in order to produce the conclusion from the premises in a piece of demonstrative reasoning (*DV* 11.1). Notice that the need for the external agent does not necessarily belie the complete pre-existence of the effect in the internal agent.

That our cognition of common principles is "innate in us" in virtue of its constituting the inner principle, or natural power, of our intellect becomes clear in the following passage, in which Thomas argues that, if our cognition were not "complete through nature" with respect to these principles, our intellect would be unable to reduce itself from potency to act:

Because our intellect shares in a defective intellectual light, it is not complete [*completus*] with regard to all the cognizables which it can cognize naturally, but it is perfectible. Nor could it reduce itself from potency to act had not its cognition with respect to some things been complete through nature. Consequently, there necessarily are some things in our intellects which we cognize naturally, namely, the first principles—even though in us this cognition is not caused unless we receive something through our senses. Therefore, the relation of our intellect to those principles is similar to that which an angel has to all that he cognizes naturally.<sup>33</sup> (*DV*8.15c)

That of which we have cognition which is complete through nature—because we cognize it simply by the light of our agent intellect—are the universal conceptions of being, unity, and the like, and the common principles which employ these conceptions as their terms. Whenever the intellect reduces itself from potency, it does so by way of bringing these universal conceptions, which are the intrinsic principles of its act of cognizing, into

33. Indeed, he holds that, were our intellectual lights stronger, in grasping first principles we would at once see all that can be derived from them, as angels grasp all that is contained in their innate species (*ST*Ia 58.3c, 4c).

perfect act. When Aquinas says that it does so “through the species abstracted from sensible things” (*DV* 11.1c), he is not claiming that the cognition we actually have of the first concepts of the understanding depends on our cognition of sensible things—for then we would not have this cognition immediately through the light of the agent intellect. As we will see in the next subsection, his point is rather that the intellect brings these concepts, and thereby its own natural power, into perfect act only in abstracting intelligible species from phantasms, an act which realizes these concepts in these species.

The intellect also reduces itself from potency to act insofar as it employs the universal conceptions of being, unity, and truth in demonstrative reasoning, which starts from the proper principles and employs common principles to generate *scientia* proper. This point is implicit in Aquinas's claim that the light of the agent intellect is the principal cause of demonstrative reasoning (*DV* 10.13), given his position that this intellect is what constitutes our natural power to understand. It is explicit in the following passage:

Just as the principal healing power is one's inner nature, so that principle which chiefly causes *scientia* is something intrinsic, namely the light of the agent intellect, whereby *scientia* is caused in us, when we descend through the application of universal [*universalium*] principles to some special points [*ad aliqua specialia*], which we gain through experience in discovery. (*OSC* 9 *ad* 7; cf. *CDA* II *lec.* 11)

In short, even after we come actually to cognize the first concepts of the understanding by realizing them in cognition of the nature of some material thing, they are still only seeds of *scientia*; they develop into *scientia* proper, only in and through our subsequently applying them, as they constitute common principles, to proper principles in demonstrations to generate *scientia* of particular sensible things.

We have seen in outline how our cognition both of the first common principles and of the concepts that make up their terms, is innate in us: this cognition pre-exists in the light of the agent intellect as our complete and active potency to understand; it is cognition which is complete through nature. Our cognition of the proper principles, including that of the natures of material things which makes up their terms, is in contrast not innate in us, because it pre-exists in the light of the agent intellect only in partial active potency. In virtue of being in complete active potency in respect of the first concepts of the understanding, the agent intellect is in complete active potency in respect of that which is formal in the intelligible species which it produces in the possible intellect. But it is only in partial active potency in respect of these intelligible species, because in producing these intelligible species it must derive that which is material in these species from phantasms.

### III. Abstraction and the First Concepts of the Understanding

I want now to focus on the agent intellect's production of intelligible forms in the possible intellect. As we saw, this is the second aspect of the process through which the agent intellect makes sense-perceptible things actually intelligible. I will argue that the agent intellect produces these forms by supplementing our sensible apprehension of the proper accidents of a thing with our innate cognitions of being and unity. It thereby brings these cognitions "into perfect act" as that which is formal in the possible intellect's cognition of the nature of a material thing—namely, the cognition of substance as the proper subject underlying and unifying sensible forms. Only through the agent intellect's supplying of this general cognition of being and unity do we come to form intentions of material things which are formal likenesses of the natures of things, intentions of the sort distinctive of the intellect. This formal content is one which the agent intellect supplies through its nature as a participating likeness in the uncreated light, the divine act of understanding.

Consider how Aquinas characterizes the agent intellect's making forms actually intelligible as its forming in itself likenesses of things:

This light of the agent intellect comes to the soul, as from its first source, from separate substances and especially from God. Thus, it is true that our mind receives *scientiam* from sensibles; nevertheless, the soul forms in itself likenesses of things, inasmuch as through the light of the agent intellect the forms abstracted from sensible things are made actually intelligible so that they may be received in the possible intellect. And in this way all *scientia* is in a certain way originally implanted in the light of our agent intellect, through the medium of universal conceptions which are immediately cognized by the light of the agent intellect. These serve as universal principles through which we judge about other things, and in which we precognize these others. In this respect, that opinion is true which holds that we previously had in our cognition those things which we learn. (*DV* 10.6c)

Earlier in this reply, Aquinas rejects the view that "the soul itself, in the presence of sensible things, forms in itself the likenesses of sensible things." He does so on the grounds that the activity of sensible things on our souls does not merely lead us to recollect content which we already had, but contributes their determinate likenesses to our intellect. But he denies only that "the soul forms in itself the likenesses of *all* things." In the passage cited, St. Thomas is conceding that the soul does form in itself the likenesses of *some* things, and that it does so in making "the forms abstracted from sensible things" actually intelligible. Moreover, it is insofar as the agent intellect makes these forms actually intelligible by adding to them its universal conceptions of being and unity, conceptions that it produces from

itself, that the agent intellect forms in itself likenesses of things. This is why Aquinas explicitly ties the agent intellect's ability to make forms actually intelligible to all *scientia* being "originally implanted in" its light in the medium of these universal conceptions.<sup>34</sup>

Aquinas also expresses his conception of the way in which the agent intellect "forms in itself the likenesses of things" in producing intelligible species by ascribing a hylomorphic composition to intelligible species:

The intelligible species has that which is formal in it, through which it is actually intelligible, from the agent intellect, which is a higher power than the possible intellect, although that which is material in it is abstracted from phantasms. Therefore, more properly, the possible intellect receives from what is higher than from what is lower, since that which is from the lower can be received by the possible intellect only in so far as it receives the form of intelligibility from the agent intellect. (*DV* 18.8 *ad* 3)

What the agent intellect contributes to the actually intelligible species independently of our sensible cognition, and which thus pre-exists in the agent intellect as its "complete and active potency," is "that which is formal" in the intelligible species, "the form of intelligibility." Moreover, Aquinas's remark that the intelligible species is actually intelligible through "that which is formal" in it confirms that the agent intellect gives intelligible species the form of intelligibility in bringing into perfect act the universal conceptions of being and unity originally implanted in its light. For, as we saw, this actual intelligibility is something that the agent intellect has insofar as it constitutes the actuality of our *intelligere*, as our participated likeness in the uncreated spiritual light. It is, thus, in producing from itself the universal conceptions that are "certain likenesses of uncreated truths," that the agent intellect gives intelligible species their form of intelligibility.

By implication, "that which is material in" the intelligible species is in contrast its determinate likeness to a material thing. This point is explicit in another passage that distinguishes the agent intellect's and phantasms' respective contributions in the production of intelligible species:

In the reception through which the possible intellect receives species from phantasms, the phantasms act as instrumental and secondary agents. The agent intellect acts as the principal and first agent. Therefore, the effect of the action is received in the possible intellect according to the condition of both, and not according to the condition of either one alone. Therefore, the possible intellect receives forms whose actual intelligibility is due to the power of the agent intellect, but whose determinate likeness to things is due to cognition of the phantasms. (*DV* 10.6 *ad* 7)

34. Compare also *DV* 11.1, discussed in Section III.ii.

Notice, too, that intelligible species have their determinate likeness to things due, not simply to phantasms, but to “cognition of the phantasms.” This likeness derives from our sensible apprehension of the proper accidents of things. As we saw in Section I.iii, the determinate likeness which our intellectual intentions bear to things derives solely from our sensible apprehension of their proper accidents. And, as we will now see, this apprehension is itself the product of the first aspect of the agent intellect’s activity in rendering phantasms actually intelligible—namely, its illumination of phantasms through the particular reason.<sup>35</sup>

#### IV. The Agent Intellect’s Illumination of Phantasms Through the Particular Reason

The particular reason is an inner sense unique to humans. It does, however, correspond to an inner sense in animals which Thomas dubs the estimative power (*vis aestimativa*), and it will prove helpful to approach his account of the particular reason by way of his account of the estimative power.

Aquinas posits an estimative power in animals on the grounds that they seek or shun things, not merely because those things are pleasurable or repugnant to their senses, but because they perceive that those things are somehow harmful or repugnant to them. Such perceptions require that these animals have intentions of the usefulness or harmfulness of things, intentions that are neither received directly in sensation nor generated through the common sense. The estimative power is simply the power by which animals come to have these intentions. Sense memory, the fourth inner sense, is the power animals have to retain those intentions.

35. It is instructive to contrast *DV* 10.6 *ad* 7 to a passage in the *Summa Theologiae* that distinguishes the contribution which *phantasms* make to our cognition of the natures of material things from that of the agent intellect generally. Having insisted that phantasms cannot act directly and of itself on the possible intellect, Thomas tells us that the phantasms cannot, then, be “the total and complete cause of intellectual cognition—better to say it is somehow the material of the cause (*materia causae*)” (*ST* Ia 84.6). Note, he does not say that phantasms are the material cause of our knowledge, but ‘the material of the cause’—a curious phrase that, to my knowledge, appears nowhere else in Thomas’s corpus. The import of this phrase, I suggest, is that phantasms, as the particular intentions over which the particular reason performs its induction, are what give rise to the determinate likeness which intelligible species bear to material things: they thus do not act directly on the possible intellect, but only provide the material of the actually intelligible species, a species whose actual intelligibility, its capacity to inform the possible intellect is due to the light of the agent intellect. I am proposing, then, that *ST* Ia 84.6 is concerned with both aspects of the agent intellect’s activity in making sensible things actually intelligible, whereas *DV* 10.6 *ad* 7, is concerned specifically with the second aspect—that is, with its activity “in the reception through which the possible intellect receives species from phantasms.”

Like the estimative power, the particular reason produces intentions, such as those of danger or utility, which are not of proper sensibles. However, whereas the estimative power does so through natural instinct, the particular reason does so through comparing the intentions that the other senses produce through sensible forms. Indeed, Aquinas calls it the particular reason, because it “compares individual intentions the way the reason compares universal intentions” (*ST*Ia 78.3; cf. *CDA* II 6 [396]). Unlike its properly intellectual counterpart, it is of particulars, because, being “part of the material order, it does not completely abstract from matter” (*OPI*sec. 425). Nonetheless, it transcends the particular, insofar as it compares particulars under universals, and can generate intentions of a particular thing “as existing in its common nature” (*CDA* II 6 [398]). And, Aquinas holds, the sense part receives this heightened power by a “kind of overflow” from the intellect, due its “propinquity to” the same (*ST*Ia 78.3 *ad* 5; cf. *ST*Ia 85.1 *ad* 3). So Aquinas tells us that the particular reason has its “collative power” because of its “conjunction with the intellect—where is found the very reason which treats of universals” (*OPI*sec. 425). Indeed, he holds that the particular reason is “said to be intellectual and rational, insofar as it participates somehow in the reason, obeying and following its operation” (*CDA* III 5 [745]); thus, he says that “the agent intellect is related to the phantasms which it illumines as an artisan is to the object it produces” (*QDA* 5).<sup>36</sup>

According to Aquinas, without the operation of the particular reason, we would never understand anything (*CDA* III 5 [745]; cf. *SCG* II 80 [6]). And in a passage which I have already discussed (in Section I.iii), he claims that the particular reason’s sensing the universal, the nature in the particular, is a necessary condition of our intellect’s ever coming to have universal cognition from our sensible cognition:

sensing is properly and *per se* of the singular, but yet there is somehow even a sensing of the universal. For sense cognizes Callias not only so far as he is Callias, but also as he is this man; and similarly, Socrates as he is this man. As a result of such an attainment pre-existing in sense, the intellectual soul can consider man in both. But if it were in the very nature of things that sense could apprehend only that which pertains to particularity, and along with this could in no wise apprehend the nature in the particular, it would not be possible for universal cognition to be caused in us from sense-apprehension. . . . Therefore, because we receive cognition of universals from particulars, Aristotle concludes that it is clear that one cognizes first universal principles by means of induction, for in this way, namely by a process of induction, sense perception produces the universal in the soul, insofar as all the particulars are considered. (*CPA* II *lec.* 20)

36. I suggest that it is also in this extended sense that Aquinas ascribes to the senses the capacity to judge (*ST*Ia 85.6). Compare Kretzmann’s interesting discussion of this and related passages in sec. 5 of “Infallibility, Error, and Ignorance.”

As we saw in Section I, Aquinas is not asserting that the particular reason forms intentions that are formal likenesses of the natures of things. Indeed, we are now in a position to see how this point is implicit in his characterizing the sense's cognizing of Socrates "as he is this man" as an attainment which "pre-exists" in sense: our sensible apprehension of Socrates does not, itself, constitute an actual cognition of Socrates as a man, but this cognition pre-exists in this sensible apprehension virtually, insofar as this apprehension is a partial efficient cause, along with the agent intellect, of this cognition's coming actually to exist in the possible intellect.

That the sensible apprehension the particular reason effects is one of the sensible accidents of things, insofar as they constitute the proper accidents of a material thing, is also suggested by Aquinas's description of the particular reason's function as that of ordering phantasms:

The reason orders phantasms in such a way as to make understanding possible. Just as the different ordering of the same letters of the alphabet produces different understandings, so too different conditions of phantasms result in different intelligible species in the intellect. (*ST* IIb 173.2)

The analogy Thomas draws between the way different words (orderings of letters of the alphabet) give rise to understandings, on the one hand, and the way different orderings of phantasms give rise to different intelligible species, confirms that phantasms do not contain the formal likenesses of the natures of material things that the agent intellect produces in abstracting actually intelligible species from phantasms. Moreover, it suggests that the particular reason's preparation of phantasms makes possible the agent intellect's production of actually intelligible species by producing an ordering of phantasms, which is a distinctive effect of the exercise of the nature of a material thing. The intention in which phantasms are ordered as such is, I suggest, what the particular reason's sensing of a particular thing "as existing in its common nature" consists in.

On Aquinas's account, the agent intellect, through the particular reason, compares different particular intentions to originate the sensible apprehension of different material substances in respect of their proper accidents, an apprehension from which we can in turn derive, in the intellect, the universal *rationes* under which the particulars it compares are to be subsumed in understanding those particulars.

One might object that this account is incoherent, because in order to compare these particulars, the particular reason would already have to have the universal *rationes* which the comparing was supposed to provide. However, in order to explain how the particular reason is capable of this comparison, we need suppose only that the cognition of natures which this comparison puts us in a position to acquire pre-exists in general in the light of the agent intellect, in *partial* active potency. For such pre-existence

suffices to explain how this light can, through the particular reason, compare our various experiences of sensible things to yield sensible apprehensions of things in respect of their proper accidents. That this cognition pre-exists only in this way explains how the comparison can be one in the service of producing a universal intention that our intellect hitherto lacked. Only through the operation of the agent intellect in particular reasoning, in the activity of comparing itself, do we come to have a full, actual grasp of the *ratio* under which the particular reason performs this comparison (*CPA I lec. 2*). In short, not only our demonstrative reasoning, but also the inductive reasoning through which we acquire our initial grasp of the quiddities of material things, requires that the conclusion pre-exist, in partial active potency, in the faculty of reasoning (*CPA I lec. 1, 3*). This contention lies behind Thomas's remark at *DV 11.1* that all of *scientia*—and thus also the proper principles on which our *scientia* of the natures of material things depends—is implanted in the light of the agent intellect, in the medium of the first concepts of the understanding.

The human spiritual light's power, much as the angelic intellect's, is perfected by being delimited by a definite likeness it itself lacks, so as to constitute the "power to achieve a specific and determinate effect" (*ST Ia 67.4 ad 2*).<sup>37</sup> In the case of an angelic intellect, the definite likenesses its spiritual light requires are innate intelligible species; the ability it has through these species is the ability to form intellectual intentions, each of which represents, in its unity, the proper and specific natures of many things. In the case of the human intellect, the initial determinate likenesses with which our spiritual light must be augmented in order to perform its natural operation consist in the images of material things which we receive in sensible cognition. The specific and determinate power to achieve an effect that our spiritual light, given these images, comes to have is the ability to produce sensible apprehensions of the natures of things through the particular reason and then to inform the possible intellect with actually intelligible forms which derive their determinate likeness to things from these sensible apprehensions.

37. Thomas actually uses this phrase in describing the way in which the physical light of the sun is perfected by being formed. The context is provided by a knotty question of scriptural interpretation: if physical light is "an active quality deriving from the substantial form of the sun," how could God have created light prior to created the sun, as in the Genesis account of creation? The reply:

The light mentioned [in the Genesis account of the first day of creation] was the light of the sun, but the sun had not yet been formed, in the sense that the substance of the sun already existed, having the power of illumining in a general way, and then later acquired a special and determinate power to produce particular effects. (*Super ad Genesii*)

This account of physical light, we shall see, parallels Aquinas's account of spiritual light.

## CONCLUSION

According to St. Thomas, the intelligible forms that come to inform our intellects are not propagated to our souls through our senses. Indeed, they are not present in any sensible cognition. They are, rather, forms produced through our share in the divine spiritual light. This connatural light of our souls produces these forms, in and through particular reasoning, in a process which aims for the perfection, in *scientia*, of our natural potency to cognize. Moreover, it is capable of doing so only because all *scientia* pre-exists in it virtually and universally, in partial active potency. But, in order for our intellect thus to reduce itself from potency to act, this light, being dim, requires the phantasms provided by our sensible cognition. It requires phantasms, not because they already contain what we represent abstractly in concepts, but because, in supplying images of material things, phantasms provide enough information to permit the agent intellect to render distinct the content which pre-exists in its light in a “general and confused way.” In this way, Aquinas maintains that we derive our intelligible species from our sense cognition without holding that these species “come in” from outside us in this cognition.

## ABBREVIATIONS

- CBDT* = Aquinas's *Commentary on Boethius's De Trinitate*  
*CDA* = Aquinas's *Commentary on the De Anima*  
*CM* = Aquinas's *Commentary on the Metaphysics*  
*CPA* = Aquinas's *Commentary on the Posterior Analytics*  
*DA* = Aristotle's *De Anima*  
*DPD* = Aquinas's *De Potentia Dei*  
*DV* = Aquinas's *De Veritate*  
*OGA* = Aristotle's *On the Generation of Animals*  
*OPI* = Aquinas's *On the Principle of Individuation*  
*OSC* = Aquinas's *On Spiritual Creatures*  
*OUIAA* = Aquinas's *On the Unity of the Intellect against the Averroists*  
*OVG* = Aquinas's *On the Virtues in General*  
*PA* = Aristotle's *Posterior Analytics*  
*QDA* = Aquinas's *Questiones de Anima*  
*SCG* = Aquinas's *Summa Contra Gentiles*  
*ST* = Aquinas's *Summa Theologiae*