

Aquinas on the Mechanisms of Cognition: Sense and Phantasia

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Summary: Aquinas's account of sensory cognition has several puzzling features, of which perhaps the most perplexing is the role he assigns to phantasia. This paper examines the role played by the intentional reception of sensible species in Aquinas's account and argues that it consists in a physical alteration of a sense organ, resulting in the reception of a form without matter by the sense. On the view argued for here, phantasms work together with the received sensible species in order to render available to consciousness what otherwise would be only unconscious sensory data of the sort found, for example, in contemporary blindsight patients. Finally, sensory cognition is not to be identified with perception, on this interpretation, because perception includes a recognition of the thing perceived, and such recognition requires a first act of intellect, which apprehends the quiddity of a thing presented to the senses.

Introduction

Hannah and Tom are in the kitchen, talking; Hannah, momentarily distracted, stares intently out the kitchen window, which is outside the range of Tom's vision. "What are you looking at?", he says. "A cat," Hannah answers. In this unremarkable exchange, Hannah does something very remarkable. Intensive research is currently being done in an attempt to build machines that can do even the simplest part of what Hannah does so effortlessly here, but these attempts have not so far been successful. How does Hannah do it? The light reflecting from the cat strikes the glass of the kitchen window as well as Hannah's eyes, yet Hannah sees the cat, and the window does not. What is it about Hannah that enables her to use the light as she does?

Contemporary thinkers are very interested in questions like these, and they attempt to solve them by research into neurobiology, computer science, and psychology, among other disciplines. Aquinas was very interested in them, too. To explore them, he used astute and subtle observations, many of them not his own but derived from a long, largely Aristotelian tradition of thinking about human cognitive processes, together with theoretical infer-

ences about faculties postulated to explain these observations.¹ Here I will be less concerned with his observations and inferences, or the traditions behind them, than with the theory that is the end result of them. In this paper, I will be able to consider only a part of the process of cognition exemplified by Hannah's recognizing a cat; I will concentrate on just the activities of the senses and of the faculty Aquinas calls 'phantasia'.

Before we turn to Aquinas, it will be helpful to say a word about perception. What Aquinas has to say about sensation or sensory cognition is often taken as his account of perception, but whether this standard interpretation is right depends, in part, on what we take perception to be. In normal adult human beings, perception is a process that encompasses a great deal, ranging from the incoming visual data to the ultimate recognition of, say, a cat. Whether some parts of the usual process can be absent from perception, and how much can be absent before we feel queasy about calling what remains 'perception', has been the subject of some dispute.

Neurobiology has made us particularly aware of some of the problems in this connection. There is, for example, the phenomenon of blindsight. A patient with blindsight has no defects in his eyes and no neurological defects in the lowerlevel processing of visual data; but he is unable to gain conscious access to the processed visual data. He therefore claims, sincerely, to be blind. On the other hand, when asked just to guess whether a yardstick in his field of vision is vertical or horizontal, he has a very high percentage of correct "guesses". Shall we say that the blindsight patient perceives the yardstick? Here, although much of the patient's visual system is functioning properly, most of us would be inclined to answer 'no'.

But what shall we say about agnosia patients? These are patients who process visual data and have conscious access to that data but who cannot recognize what they perceive by means of the sense afflicted with agnosia. Although such patients can describe the objects they see and although they are familiar with such objects,

¹ Aquinas's views were themselves one pole around which subsequent storms of discussion swirled. For some examination of these discussions, see, for example, Marrone 1985; Tachau 1988; Tachau 1982. All references to Aquinas's works in what follows are to the Marietti editions.

they have a profound inability to categorize those objects. A visual agnosia patient can describe many of the properties of a cat in front of him; but if he is asked, after describing it, whether he sees a cat anywhere, he will answer in the negative. Shall we say that the agnosia patient perceives what is presented to the sense associated with the agnosia? Neurobiologists are accustomed to answer in the negative. In a recent neurobiology text, for example, agnosia is described as “the inability to perceive objects through otherwise normally functioning sensory channels” (Kandell 1991: 831).

Some philosophers who agree with such neurological assessments argue that in consequence perception must consist in the whole process culminating in the recognition of objects. On their view, to see an extramental object – say, a cat – is to see it *as a cat*; on this way of thinking about perception, all seeing is seeing as. If perception is to be thought of in this way, then, as we shall see, sensory cognition on Aquinas’s account should not be equated with perception. Rather, as I will argue, it consists just in the part of the process of perception which is still intact in agnosia patients; in the case of vision, this will be seeing, but without any seeing as.

Aquinas’s account of sensory powers

Aquinas thinks that there are five external senses – sight, hearing, touch, taste, and smell – and that each is a “power (*virtus*) in a corporeal organ” (*In DA* II.xii.377).

Each of the senses has both a proper sensible and a common sensible. On Aquinas’s view, the proper sensible of each sense is what that sense takes in primarily and what cannot be taken in by another sense. The *common* sensibles are those that more than one sense can take in: movement, rest, number, shape, and size. Some of these – number, movement, and rest – can be discerned, at least sometimes in some conditions, by all five external senses; and some senses – sight and touch – are able to discern all the common sensibles in certain circumstances (*In DA* II.xiii.384–386).

Although what the senses take in is the proper and common sensibles, what is sensed by these means are extramental objects: “the senses when they are active are of singular things which are

outside the soul" (*In DA* II.xii.375).² So our senses contribute to cognition by putting us in epistemic contact with extra-mental material objects.

The senses participate in cognition by receiving a "sensible *species*" from the extramental thing presented to the senses. What exactly a sensible *species* is is not so easy to determine. It has been taken to be everything from a pictorial image of a material object to the sense impressions which some philosophers suppose to be the primary objects of sensory awareness.³

On Aquinas's view, a sensible *species* is the form of a matter-form composite. "A sensory power is receptive of *species* without matter," Aquinas says (*In DA* II.xxiv.555); and, in explaining the way in which a sensory power is acted on by what affects it, he remarks, "a sensory power receives form without matter" (*In DA* II.xxiv.553). By 'form', Aquinas generally means something like an essentially configurational state. In the case of a material object, the form of the object is the configurational state in which the matter of that object is arranged. The sensible *species* is the form, the configurational state, of what is sensed, which the sensory power receives. A sensible *species* is not itself what is sensed. Instead it is the means by which the senses sense extra-mental things.

Here, however, it seems as if a problem ought to arise for Aquinas. On his view, the sensory powers are powers of bodily organs, and the sensible *species* or form is received by those bodily organs. So the *species* or form is imposed on the matter of the sense organ. But the imposition of form on matter is the way in which change and generation occur on Aquinas's account. Since the *species* is a form of whatever it is that is being sensed, say, a stone, when that *species* is imposed on the eye, for example, it seems as if it ought to organize the matter of the eye as it organized the matter of the stone. In that case, imposing the form of the stone on

² See also *In DA* II.v.284, where Aquinas contrasts sense and intellect on this score, claiming that sense is of particular things while intellect has to do with universals.

³ To take just a few examples of the way in which '*species*' has been understood, Martin Tweedale says "the visual species can be viewed as a little colored image that is propagated through the air and comes to exist in the eye" (Tweedale 1990: 35-52). F.C. Copleston takes sensible *species* as sense-impressions; according to Aquinas, he says, "Our organs of sense are affected by external objects, and we receive sense impressions" (Copleston 1955: 181).

the eye would not bring it about that the eye senses the stone; rather the eye would become a stone or have some of the qualities of a stone.⁴

The solution to this problem lies in a distinction important for Aquinas's account of cognition. There are two ways a form can be received and a change occur. One way he calls "natural" or "material". The natural reception of a form in matter does make the newly resultant composite be whatever the form organizes it into. A form of a stone naturally or materially received in matter produces a stone or the qualities of a stone. Similarly, when the form of a quality such as sweet or red is received naturally, it makes the matter that receives it sweet or red. Aquinas says: "I call a change 'natural' insofar as a quality is received in its recipient according to the [kind of] being associated with the nature [of things] (*secundum esse naturae*), as when something is made cold or hot or moved with respect to place." (*In DA II.xiv.418*).

There is another way a form can be received, however. Aquinas often says that a form is received in the recipient according to the mode of the recipient, that is, in the way the recipient is able to receive it.⁵ In natural reception or change, the recipient of a form has the same disposition or potentiality as that from which the form comes, and that is why the form can be received in the same mode of being in the recipient as it had in that from which it gets the form. But sometimes,

... the material disposition for receiving [a form] on the part of the recipient is not similar to the material disposition on the part of the agent. And so [in such a case] the form is received in the recipient without matter, insofar as the recipient is assimilated to the agent as regards form, but not as regards matter. And in this mode [of reception] a sense receives the form without the matter, because the form has a different mode of being in the sense from that which it has in the thing being sensed. For in the thing being sensed it has natural being, but in the sense it has intentional and spiritual being. (*In DA II.xxiv.553*)

Elsewhere he says,

4 Some scholars explain Aquinas's theory of cognition in formulations that make it seem as if Aquinas would welcome the conclusion that the cognizer becomes the thing cognized. I discuss such formulations and the parts of Aquinas's theory of cognition that give rise to them in Stump 1997.

5 See, for example, *ST I.84.1*.

There are two kinds of change (*immutatio*): natural and spiritual. A change is natural insofar as the form of the agent is received in the recipient according to natural being, as when heat [is received] in what is made hot. But a change is spiritual insofar as the form of the agent is received in the recipient according to spiritual being, as when the form of a color is [received] in the pupil of the eye, which does not become colored as a result. For the operation of the senses, spiritual change is required, by means of which the intention⁶ of the sensible form comes to be in the [bodily] organ of the sense. Otherwise, if natural change were sufficient for sensing, all natural bodies would sense, when they were altered. (*ST*1.78.3)

This distinction of Aquinas's between two different ways of receiving a form is couched in language unfamiliar to us. What does he mean by these claims about natural and spiritual reception of forms? The notion of a natural reception of a form is perhaps not so hard to understand. He thinks of a material object as a composite of matter and form, and a form of that object is a configuration of it. When matter is configured in a certain way, say, with a configuration of a stone, the matter so configured is a stone or stone-like. What is harder to understand is the "spiritual", "intentional", or (as he says elsewhere) "immaterial" reception of a form. Here the configurational state of something such as a stone is preserved and transferred to something else – the eye, for example. But it is transferred in such a way that it does not make the eye a stone or stone-like. Although the configurational state is somehow really conveyed to and present in the eye, it does not reconfigure the matter of the eye in the way it configures the matter of the stone. How is this possible? If the eye really does accept a configurational state that makes some matter be a stone or have the qualities of a stone, why would that configurational state not also make the eye a stone or stone-like? On the other hand, if the eye does not become a stone or stonelike, in what sense does it contain a configurational state of a stone?

It helps to see here that, although Aquinas's terminology is unfamiliar to us, the phenomenon he wants to call attention to is not. Consider, for example, a street map. The map is effective in the use for which it was designed precisely because it is an instance of the spiritual reception of the forms of material objects. Configurational states of the city's streets are transferred to the paper of the map, but they are transferred in such a way that the

⁶ Aquinas tends to use 'immaterial', 'intentional', and 'spiritual' roughly synonymously to refer to this kind of change or reception of form.

paper which receives those configurational states is not configured by them in the way that the matter of the streets is. Because the configurational states of the streets are successfully transferred to the paper of the map, the map enables its user to find her way around the city's streets. But because the configurational states are received "spiritually" in the paper, the map can be carried in the car. If the forms of the city streets were received in the matter of the map's paper with natural reception (supposing that to be even possible), they would make that matter itself city streets. In that case, we would have a re-production (literally speaking) of the city's streets, but we would not have a map. So a map seems like a good example of the spiritual or immaterial reception of forms, and so does anything else in which configurational states are preserved in some sort of encoded fashion. Blueprints of a building, for instance, are another example in which configurational states are transferred and preserved without making the matter that receives the forms the building.

Furthermore, we could have the spiritual reception of forms even in cases in which there is not the sort of one-to-one correspondence found in street maps or blueprints for buildings. Consider, for example, the way a configurational state of a protein is preserved in the code of DNA. There each amino acid constituting the protein is represented by a particular triplet of nucleic acids in DNA. Those who know the code of DNA can know the constitution of a protein just by reading the ordered triplets of nucleic acids in a certain stretch of DNA. The configuration of the DNA contains the configuration of the amino acids of the protein, but it contains the protein's form in a spiritual way, as Aquinas would put it, because although the form of the protein is in the DNA, it is not in the DNA in such a way as to configure the DNA into the protein. What Aquinas refers to as the spiritual reception of an immaterial form, then, is what we are more likely to call encoded information.

One other point about the reception of forms in the process of sensing is worth making here. The claim that the senses receive the sensible *species* with spiritual or intentional or immaterial reception does not by itself make clear whether or not that reception consists of a material change in the sense. The intellect receives *species* with spiritual reception, but that spiritual reception is not itself a matter of changes in something material, because in-

tellec does not operate in a bodily organ, according to Aquinas. On the other hand, as my examples above point out, it is perfectly possible to have the spiritual reception of an immaterial form that consists in certain changes in matter, such as the lines printed on the street map.

Scholars have disputed the point,⁷ but, in my view, the texts are decisively in favor of the conclusion that for the senses the spiritual reception of sensible *species* is a change in the matter of the bodily organ of the sense. Although it seems odd or even paradoxical to describe some changes in matter as the spiritual or immaterial reception of a form, it is a mistake, I think, to suppose that there is anything ghostly about such reception of forms. For example, Aquinas says: "A sense is a power in a corporeal organ Everything is received in something in the mode of [the recipient] And so it must be that a sense receives corporeally and materially the similitude of the thing which is sensed" (*In DA* II.xii.377). In another place, he says: "Sense and imagination are powers attached to corporeal organs, and so similitudes of things are received in them materially, that is, with material conditions, although apart from matter" (*QDV* II.5. ad 2).

In yet another passage, he seems to be trying to ward off just the mistaken interpretation at issue here. He says,

Because Aristotle said that a sense is receptive of *species* without matter ... someone could believe that a sense is not a power in a body (as the intellect is not). And, therefore, to rule this out, Aristotle assigns an organ to [each] sense. And he says that ... the primary organ of a sense is something in which there is such a power – i.e., a power receptive of *species* without matter. (*In DA* II.xxiv.555)

If the senses did undergo the spiritual reception of an immaterial form without a material change in a bodily organ, Aquinas is saying here, the senses would have been assimilated to the intellect, which differs from the senses, in his view, in virtue of not making use of a bodily organ.

Finally, Aquinas himself supposes that the medium between the object sensed and the sensory power – such as air, in the case of vision – also receives the sensible *species* with spiritual reception;⁸

7 See, for example, Cohen 1982; Haldane 1983; and Hoffman 1990.

8 *In DA* II.xiv.418, where he says that there is a spiritual change when a *species* is received in a sensory organ or *in the medium* by means of the intentional mode of reception and not by means of the natural mode of reception.

and since the medium is entirely material and has no soul of any sort, the only way it can receive anything is by a change affecting its matter. It is therefore clearly possible on his view for the spiritual reception of an immaterial form to consist in the alteration of matter.

For all these reasons, I am inclined to interpret Aquinas as thinking that the sensible *species* is an immaterial form received with immaterial or spiritual reception, but that this reception is a matter of material change in an organ of the body. The reception is “spiritual” or “immaterial” in the sense that the way in which the matter of DNA contains the configuration for, say, hemoglobin is not the usual, material way in which matter receives form; it does not turn the matter of the DNA into hemoglobin. Aquinas’s “spiritual” reception of forms is thus like the coding of maps or blueprints. This is also the way we ourselves think sensation occurs, encoded information being received in virtue of material change in a corporeal sense organ.

Since this process – the intentional reception of the immaterial sensible *species* with material changes – is common to both the medium and sense organs, it clearly is not itself sufficient for any cognitive process to occur. Before going on to consider what else is necessary, it will be helpful to consider briefly one more part of Aquinas’s account of sensible *species*, namely, the way in which a *species* is a similitude of the thing sensed.

Aquinas often characterizes sensible *species* (as well as intelligible *species* and phantasms) as similitudes. The Latin ‘*similitudo*’ is commonly translated ‘likeness’, and some readers have supposed that a similitude pictorially resembles the thing of which it is a similitude. But this is at best a very misleading impression. Some similitudes may be pictorial in character, but not all are. ‘*Similitudo*’ is cognate with ‘*similis*’, the Latin for ‘similar’; and things are similar insofar as they share qualities – or, as Aquinas would say, forms. And so, on his view: “similitude is grounded in an agreement in or sharing of forms. Consequently, there are many kinds of similitude, corresponding to the many ways of sharing forms” (STI.4.3).⁹

⁹ See also *QDV* 8.8 (“there is a similitude between two things insofar as there is agreement in form”).

Aquinas makes many distinctions among kinds of similitude, but the one most relevant to our purposes is this:

the similitude of two things to one another can be grounded in two [different] ways. In one way, insofar as there is sharing of a nature, and such a similitude is not needed between a cognizer and what is cognized. In another way, according to representation, and this [sort of] similitude is needed on the part of the cognizer with respect to what is cognized. (*QDV* 2.3.ad 9)

He makes a similar point in a different place; there he says,

A similitude of one thing to another is found [to occur] in two [different] ways. In one way, according to the [kind of] being associated with the nature [of things], as the similitude of the heat of fire is in the thing heated by the fire. In another way, as regards cognition, as the similitude of fire is in sight or touch. (*SCG* II.46.1234)

So similitude encompasses many kinds of agreement in form. Pictures or pictorial resemblances will count as similitudes, but so will DNA, insofar as it shares forms with the proteins it codes for. For that matter, heat in the thing heated also is a similitude, since it is a form shared by both the heating agent and the thing heated. When the form of one thing is received in another with natural reception, then there is the similitude grounded in an agreement of nature, as in the example of fire's heating something. But in cognition the similitude is based on the intentional reception in the cognizer of the form of the thing cognized. The cognizer and the object of his cognition share a form, but the similitude in this case is a representation – and representations need not be pictorial in nature. It is therefore a mistake to take '*similitudo*' as necessarily indicating a pictorial resemblance.

Nothing in Aquinas's account of the role of similitudes in sensation keeps him from holding that human beings cognize things in extramental reality directly and immediately. Similitudes are only the means by which cognition occurs and are not themselves the objects of cognition:

To cognize things by means of their similitudes existing in the cognizer is to cognize those things as they are in themselves, or in their own natures. (*ST* I.12.9)

Phantasms

The next step in the process of sensory cognition, after the reception of *species* by the sensory powers, has to do with phantasms. Aquinas's views about phantasms are a perplexing part of his account of cognition since, at first glance anyway, phantasms seem entirely superfluous as regards the cognition of extramental reality. Aquinas holds that there is no cognition of individual material objects without phantasms. And yet why are sensible and intelligible *species* (the intellect's analogue to sensible *species*) not together sufficient to produce the cognition of some object presented to a sense? As far as that goes, why are sensible *species* by themselves not enough to bring about such cognition?

Aquinas, however, claims that all cognition requires phantasms. He says, for example,

If the active intellect were related to the possible intellect as an active object is related to a power ... it would follow that we would immediately understand all things But, as it is, the active intellect is related not as an [active] object, but rather as what actualizes [cognitive] objects. What is required for this – besides the presence of the active intellect – is the presence of phantasms, the good disposition of the sensory powers, and practice at this sort of operation (ST I.79.4.ad 3)

In another place he says: "In the course of [this] present life, in which our intellect is joined to a body that is not impassible, it is impossible for our intellect actually to understand anything except by turning to the phantasms." (ST I.84.7).

Like sensible *species*, phantasms are similitudes of particular things (ST I.79.4.ad 4; see also I.84.7.ad 2); and like sensible *species* they exist in corporeal organs (ST I.85.1.ad 3). In fact, they seem to be just similitudes of the same extramental things as the sensible *species* are. Furthermore, the form which is the sensible *species* is preserved in the phantasm, and the agent intellect abstracts that form from the phantasm in order to make possible intellectual functioning. Aquinas says, for example,

The *species* of a thing, insofar as it is in the phantasms, is not actually intelligible, because the *species* is one with the intellect in actuality not in this way [that is, not in the way the *species* is in the phantasms], but rather insofar as the *species* is abstracted from the phantasms. (SCG II.59.1365)

Finally, the cognitive power that is phantasia is dependent on sensory powers. Aquinas says,

There is a close relationship between phantasia and sense, because phantasia cannot arise without sense, and it occurs only in those [creatures] that have sense – that is, in animals. Furthermore, there is phantasia only of those things of which there is sense, that is, of those things which are the objects of sense (*sentiantur*). (*In DA* III.vi.657)

But, Aquinas remarks, reporting Aristotle's position approvingly, "phantasia is not sense" (*In DA* III.v.641).

So, initially at least, it seems as if the phantasms are virtually identical to the sensible *species*. But what, then, is the difference between the sensible *species* of sensory powers and the phantasms of phantasia?

An important clue is given by what Aquinas takes to be the etymology of 'phantasia'. According to Aquinas, "the name 'phantasia' is taken from vision or from appearing" (*In DA* III.iv.632). And a little later he explains, "The Greek '*phos*' is equivalent to 'light', and from there they get '*phanos*', which is appearance or illumination, and phantasia" (*In DA* III.vi.668).

Furthermore, he associates phantasia with something's appearing to us. For example, he says, "As [a creature] engaged in sensing is moved by sensible [*species*], so in the process of phantasia [a creature] is moved by certain appearances, which are called 'phantasms'" (*In DA* III.vi.656). And elsewhere he cites Aristotle approvingly to the same effect. "Aristotle holds that animals that have phantasia are those to whom something appears in accordance with phantasia, even when they are not actually sensing" (*In DA* III.v.644).

When a cognizer has such appearances without being engaged in the process of sensing, Aquinas sometimes speaks of the cognitive power in question as imagination, rather than phantasia, although he seems to regard the power of imagination as a part of or even identical to the power that is phantasia. And another important clue to his view of phantasia comes from what he says about the process of imagining. For example, he says, "The experience (*passio*) of phantasia is in us when we wish, because it is in our power to form something as if it were appearing before our eyes, such as gold mountains, or whatever we wish." (*In DA* III.iv.633). Here, then, Aquinas describes a person who is having

images of gold mountains in her mind as having an experience produced by the power of phantasia. Phantasia is also the cognitive power responsible for producing the images of dreams, in his view. You can see that phantasia is distinct from sense, he says, because a sleeper phantasizes, but she does not do so because she's actually or even potentially sensing something (*In DA* III.v.641).

On his view, the process of imagination, which is operative in sleep and which we can engage in at will while awake, is a case of being moved by phantasms when we are not concurrently sensing something. Phantasia proper, as distinct from imagination, produces the analogous sort of experience when our senses are simultaneously receiving the *species* of things that are outside the mind and presented to the senses. He relates the processes of phantasia and imagination in this way:

Every motion of phantasia which arises from the motion of the proper sensibles [of the sensory powers] is for the most part true [that is, is received in the cognitive power in the way in which it is in the thing sensed]. I say this with regard to cases in which the sensible is present, when the motion of phantasia is simultaneous with the motion of the senses. But when the motion of phantasia occurs in the absence of [the motion of] the senses, then it is possible to be deceived even as regards proper sensibles. For sometimes absent things are imagined as white, although they are black. (*In DA* III.vi.664-665)

Finally, Aquinas sometimes talks about our, as it were, seeing things in the phantasms. He says, for example, "When someone wants to understand something, he forms for himself phantasms, by way of examples, in which he, as it were, looks at (*inspiciat*) what he is concerned to understand" (*ST* I.84.7). Similarly, in the course of discussing the difference between phantasia and opinion, Aquinas says, "when something appears to us in accordance with phantasia, we are as if we were regarding something in a picture..." (*In DA* III.iv.634).

With these "as if" and "as it were" locutions, Aquinas, I think, is trying to capture a feature of perception that is hard for us to characterize, too, namely, its conscious character. He certainly does not mean to imply that we literally look at phantasms. The sense of sight, of course, could not literally see an immaterial phantasm, and Aquinas explicitly repudiates the view that phantasms are the objects of intellect's cognition. In arguing against Averroes's claim that there is only one intellect for the whole human species, for example, Aquinas remarks, "it cannot be said

that my act of understanding differs from your act of understanding in virtue of the fact that our phantasms are different, because a phantasm is not something that is itself actually intellectually cognized..." (DSC q.un., a.9 corpus).

Given all these things that Aquinas says about phantasms and phantasia, I think we should take phantasia as the cognitive power that makes things appear to us or that gives us access to the sensory data taken in by the senses;¹⁰ that is, phantasia is the power that produces the conscious experience which is a component of ordinary sensing.¹¹ This way of interpreting the role of phantasms in cognition also helps to clarify the difference between phantasms and sensible *species* in Aquinas's account. On Aquinas's view, sensible *species* are not the objects of our cognition. What he says about phantasia strongly suggests that sensible *species* are not available for consciousness either and that this fact is one of the main differences between sensible *species* and phantasms.

Furthermore, we can employ the power of phantasia at will, Aquinas thinks, to imagine things; in imagination, our mental experience includes the conscious appearances of things that are not present to our senses. The difference between phantasia proper and imagination is just a matter of whether or not the cognitive power is operating simultaneously with the sensory powers and in conjunction with them. So it seems reasonable to assume that phantasia proper produces in us the same sort of conscious experiences that imagination does, only this time conscious experience of the extramental reality being sensed.

On this way of understanding phantasia, the extramental things currently making a causal impact on the senses are consciously experienced by us because phantasia has further processed the sen-

¹⁰ Joseph Owens puts a roughly similar point this way: "Species is taken here in the philosophical meaning of 'form'. These impressed forms determine the imagination to produce an image or representation of the thing [sensed], an image in which the thing itself is held before the percipient's internal gaze" (Owens 1992: 125).

¹¹ Aristotle's understanding of phantasia has been the subject of considerable recent discussion; see, for example, Sheppard 1991, and the literature cited in Sheppard's article. Some of the suggestions made regarding Aristotle's understanding of phantasia border on the interpretation I give regarding Aquinas's notion of phantasia. In presenting Neoplatonist readings of Aristotelian phantasia, which she thinks mirror certain contemporary controversies, Sheppard discusses phantasia's "role in interpreting the data of perception" (171) and phantasia's connection with mental images.

sible *species* of those things into phantasms. Without the phantasms, the sensible *species* alone would not produce conscious experience of what is being sensed.

The person who had only sensible *species* but no phantasia would thus be like a blindsight patient. A blindsight patient is receiving visual input through his senses, and it is input which is to some extent and in some mode available to him in forming judgments about the external world – that the yardstick is horizontal, for example. But the blindsight patient reports sincerely of himself that he is blind, because the visual input is not accessible to his consciousness. Using Aquinas's terminology, we can say that the visual sense of the blindsight patient is functioning normally, but that phantasia is not operating in him at all. He has the sensible *species* of objects presented to his eyes, but no phantasms of them.

When we combine the actions of the senses and the phantasia, have we then got Aquinas's account of what we would call perception? Or, to put the same question a slightly different way, is Aquinas's notion of sensory cognition equivalent to our notion of perception? The answer to questions of this sort depends at least in part, as I said above, on what we take perception to be. If we accept the understanding of perception underlying the neurobiological description of agnosia as "the inability to perceive objects through otherwise normally functioning sensory channels", then we would have to deny that on Aquinas's account the functioning of the sensory powers together with the phantasia give us perception.

It is true that, on the interpretation argued for here, phantasms give us conscious experience of extramental objects and conscious access to sensory data about such objects. But a person who had only so much and no more of the cognitive processes Aquinas describes would be in the position of an agnosia patient who is agnostic for all senses. Even though he might be able to describe some of the properties of what he is sensing, the only answer he could give to any question of the form "*What* are you sensing?" would have to be "I do not know." If the agnosia patient cannot properly be said to perceive, although he has "normally functioning sensory channels" as well as conscious access to the data from those channels, then a person whose cognitive processes included only what is contained below the level of the intellect in Aquinas's account could not be said to perceive either.

That is because recognizing *what* one is perceiving depends on

an act of intellect. In the example with which I began, Hannah's answer to the question "What are you looking at?" is "A cat". For Hannah to see what is presented to her vision as a cat requires what Aquinas calls the first operation of the intellect, namely, determining the quiddity or *whatness* of a thing.¹² Neither the senses alone nor the senses combined with phantasia can determine *what* it is that is being perceived. Doing so is the function of the intellect. *A fortiori*, the senses and phantasia together are not sufficient for perceptual judgments, such as "That is a cat", since a judgment of that sort requires what Aquinas calls compounding and dividing,¹³ and that activity is the second operation of the intellect.

Nothing in what I have said entails that on Aquinas's account there ever actually is seeing without seeing as, for normal adult human beings. In the normal condition, for Aquinas, the senses and the phantasia function together with the intellect. I mean to point out only that on his view the cognitive process is analyzed into different subsystems. The actions of some of those subsystems, namely, sensory powers and phantasia, are sufficient for seeing without being sufficient for seeing as. By the same token, I do not mean to imply that for Aquinas cognition consists in a *temporal* sequence in which we first see and then see as. If there indeed is a temporal sequence of some sort, in most normal cases it is of such short duration as to be imperceptible; from a subjective point of view, an object is perceived – seen as a cat, for example – as soon as it is presented to the senses, if the perceiver's cognitive faculties are working properly.

Conclusion

So, when Tom says to Hannah, "what are you looking at?" and Hannah answers, "a cat", the process Hannah undergoes to recognize the cat works like this, on Aquinas's view. First, the form of the cat is received into the air as encoded information; or, as Aquinas puts

¹² Some confusion can be raised by Aquinas's notion of the first operation of the intellect because it sometimes looks identical to what Aquinas sees as the final product of intellect in the acquisition of *scientia*, namely, an understanding of the definition of something. For an excellent presentation of the problem and its solution, see Kretzmann 1992.

¹³ For a good discussion of medieval accounts of compounding and dividing, see Kretzmann 1981.

it, the sensible *species* is received spiritually by the medium. This encoded information, the spiritually received sensible *species*, is then transmitted through the air to Hannah's eyes, which undergo some material change in consequence. Then the sensible *species* impresses itself on an internal bodily organ in the brain which has the power of phantasia and produces phantasms, conscious awareness of sensory data without categorization – seeing without seeing as. The intellect then processes the encoded information in the phantasm; and this further action on the part of the intellect results in Hannah's seeing the object presented to her vision as a cat.

Insofar as we think of perception as seeing as, then our notion of perception is equivalent to Aquinas's sensory cognition plus the first operation of the intellect. The senses and the phantasia together enable Hannah to get sensory data about the cat. But she does not get the concept *cat* from that data until the first operation of the intellect is completed. So Aquinas divides the process of recognizing a cat into different stages, with different subsystems operating at each stage. That he is right to do so is confirmed by the fact that our recognition of a cat can be interrupted at roughly the junctures he picks out in the processing. The blind-sight patient has sensible *species* but no phantasms. The visually agnostic patient has sensible *species* and phantasms; but because he is visually agnostic, he cannot move from the *species* and phantasms to the recognition of what he sees as a *cat*. So although he can describe the cat according to the way she visually appears to him, if we ask him what he is describing, he will say, "I do not know"; and if we ask him whether he sees a cat, he will answer, "no". Although Aquinas's account is complicated, then, its complication seems to reflect accurately the complexity of our cognitive processes¹⁴ as we currently understand them.¹⁵

14 I disagree strongly, therefore, with Anthony Kenny, who says things of this sort about Aquinas's views of cognition: "The various accounts which Aquinas gives of the physical processes of sense-perception are almost always mistaken, and need not detain us For explanation of the nature of sense-perception we have to look to the experimental psychologists, whose investigations have superannuated the naive and mistaken accounts which Aquinas gives of the physical processes involved" (1993: 34). My evaluation of Aquinas's account of cognition differs so widely from Kenny's in large part because we interpret that account in such different ways.

15 This paper has benefited from comments and questions by participants at the 1996 Copenhagen Conference on Medieval Philosophy and by faculty and stu-

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