ARGUMENTS OF THE PHILOSOPHERS

The purpose of this series is to provide a contemporary assessment and history of the entire course of philosophical thought. Each book contains a detailed, critical introduction to the work of a philosopher or school of major influence and significance.

Also available in the series:

Aquinas	Eleonore Stump
*Descartes	Margaret D. Wilson
*Hegel	M. J. Inwood
*Hume	Barry Stroud
*Kant	Ralph C. S. Walker
*Kierkegaard	Alastair Hannay
*Locke	Michael Ayers
*Karl Marx	Allen Wood
Malebranche	Andrew Pyle
*Merleau-Ponty	Stephen Priest
*Nietzsche	Richard Schacht
*Plato	Justin Gosling
*Plotinus	Lloyd P. Gerson
*Rousseau	Timothy O'Hagan
*The Presocratic Philosophers	Jonathan Barnes
*Santayana	Timothy L. S. Sprigge
*Sceptics	R. J. Hankinson
*Wittgenstein, 2nd edition	Robert Fogelin

* also available in paperback

AQUINAS

Eleonore Stump

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2003
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Ave, New York, NY 10016

Transferred to Digital Printing 2005

Routledge is an imprint of the Taylor & Francis Group, an informa business

Typeset in Garamond by Taylor & Francis Books Ltd
Printed and bound in Great Britain by TJI Digital, Padstow, Cornwall

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Stump, Eleonore, 1947–
Aquinas/ Eleonore Stump.
p.cm.– (Arguments of the philosophers)
Includes bibliograpical references and index.
1. Thomas, Aquinas, Saint, 1225?–1274. I. Title. II. Series.
B765.T54 S78 2003
189'.4–dc21 2002036629

ISBN 10: 0-415-37898-2
ISBN 13: 978-0-415-37898-7

FOR MY DEARLY LOVED CHILDREN

We have also a more sure word of prophecy, whereunto you do well that ye take heed, as unto a light that shineth in a dark place, until the day dawn, and the day star arise in your hearts.

He that overcometh and keepeth my works unto the end ... I will give him the morning star ... I am Alpha and Omega, the beginning and the end, the first and the last ... I am the root and the offspring of David, the bright and morning star.

CONTENTS

PREFACE

There are some books which only a young and inexperienced scholar would undertake to write but which only a senior scholar who knows enough to shrink from the task might conceivably be able to write. This is one of those books. Its explicit purpose is to explicate the views of Aquinas with some historical accuracy and to bring them into dialogue with the corresponding discussions in contemporary philosophy. On the face of it, of course, this sort of twinned investigation should be the aim of any philosophical study of the texts of a thinker from some previous age. If such a study is not carried out with historical accuracy, the result may be philosophically interesting, but it will not count as a study of the thought of that historical figure. On the other hand, if the views of preceding periods are presented in such a way that they make no contribution to current philosophical discussion, then the historical views are preserved only as museum specimens, and not as living interlocutors still able to influence philosophical thought. The explicit aim of this book is therefore a good one. The problem comes in the attempt to execute it. Aquinas wrote on a very broad range of issues, in highly technical and sophisticated ways, so that understanding and presenting his thought is a daunting undertaking. Connecting it with related discussions in contemporary philosophy is a Herculean task.

In one way or another, I have been engaged in this task for more years than I care to acknowledge. In the process, I have learned a great deal, including lessons about the need for compromise. The compromise is what some readers may notice first.

Readers familiar with Aquinas will find that some part of Aquinas's thought – or, perhaps more offensively, some standard explication of it – which strikes them as particularly important is not represented in this book at all. The list of things I have left out of this book is at least as long as its table of contents. So, to take just one of many things which could be given as an example, I have said virtually nothing about the relationship of Aquinas's views to the views of preceding thinkers, either those in the ancient Greek and Hellenistic world or those in the earlier Latin-speaking medieval period or about the way in which Aquinas's thought was influenced by the

5

GOD'S KNOWLEDGE

Introduction

Most people agree that any being that could count as God would have to know everything there is to know. But *how* is God supposed to know what he knows? Obviously, not by beginning with sensations, the way human beings generally do, since, as perhaps even more people agree, God is not corporeal and so cannot have sensations. Conceivably, material objects might make some other sort of cognitively effective causal impression on an incorporeal God, but it's not easy to imagine what that might be. Besides, any account of such an impression would face the apparently insuperable obstacle of the absolute impassibility that is often included among standard divine attributes.[1] Still, if a person's moving her hand from here to there cannot causally affect the mind of God, how does God know that she is moving her hand? 'He just does!' has some appeal as a response on behalf of an omnipotent being, but it's no answer.

Aquinas worked hard at providing answers to questions of this sort about God's knowledge, but the explanation he developed is in many respects perplexing. Furthermore, Aquinas's account of God's knowledge is sometimes interpreted in such a way as to exacerbate its difficulties; and so, before I turn to the puzzles in Aquinas's account, I want to say something about the problems of one common way of understanding that account.

For the sake of having an example, consider the interpretation of Leo Elders.[2] Elders says that, according to Aquinas: God knows "all things which exist at any time, whether past, present or future ... [He] knows whatever will come to be in the succession of time."[3] But "God's knowledge of things other than himself can only be based on his causality. He knows things because he is their cause and he knows them in and through his causality."[4] In discussing Aquinas's views of God's causality, Elders says:

> It is manifest that God causes things by his intellect ... [Of course,] an intelligible form alone is not a principle of action unless there is

> an inclination to produce this effect. Hence God's intellect must be determined to precisely this effect by his will.[5]

Nonetheless, Elders holds: "God's knowledge is a *causal* knowledge so that God knows things because he makes them."[6] And Elders is not alone in interpreting Aquinas's account of God's knowledge in this way. Brian Shanley, for example, says:

> Nothing skews an account of Aquinas more than the erroneous imputation to God of a perceptual paradigm of knowledge ... God's knowledge is not effected by and dependent upon what is known, but rather is itself causative of what is known.[7]

Interpretations such as this have an unusual epistemological implication. Strictly speaking, human beings cannot know a contingent thing or state of affairs unless it first exists or obtains, but, on this interpretation of Aquinas's account, for God the converse is the case: strictly speaking, nothing can exist, occur, or obtain, unless God first knows it. Where God is concerned, on this interpretation of Aquinas's account, knowledge is logically prior to and causally efficacious of the reality of what is known.

Although, as I will explain below, this interpretation of Aquinas's account of God's knowledge seems to be based on things Aquinas says, it has very serious problems as an interpretation of his views.

In the first place, it, of course, will not do as a general account of God's knowledge. That is because, on Aquinas's view, there are many things God is said to know that no one supposes Aquinas takes God to cause. To begin with, there is God's knowledge of himself, his nature and existence, and of necessary truths; this divine knowledge cannot be causative, on anyone's interpretation of Aquinas. So, for example, Aquinas takes God to know necessary truths, but God's knowledge does not cause these truths. God knows that 1 = 1, but he does not thereby (or in any other way) cause it to be the case that 1 = 1. Additionally, and more importantly, God knows that he exists, that he is a knower, and that he has a certain nature. But it is evident that God's knowing these things does not cause them to be. God's knowing cannot be the efficient cause of God's existence or of his being a knower, since these things are logically prior to his knowing. And if God knows anything, then he at least has the nature of a knower, so that his having a nature is also logically prior to his knowing, not a causal effect of it.

In addition, there is also God's knowledge of those possible creatures that God chooses not to create and that consequently do not exist.[8] In a text that seems on the face of it to support Elders's interpretation, a passage in which Aquinas says that things depend on God as an artifact depends on its artisan, so that the existence of things depends on God's knowledge, rather than the

other way around, Aquinas goes on to point out that any artisan has two sorts of knowledge of his creation; speculative and practical. Practical knowledge results in the production of the artifact, but speculative knowledge of an artifact is compatible with the artisan's never producing that artifact. For that reason, Aquinas says: "God has knowledge of things he intends never to create and that therefore never exist."[9] Clearly, this knowledge of God's is not causative either.

So it is clear that we cannot interpret Aquinas as holding that *all* God's knowledge is causative. For some of God's knowledge, a perceptual paradigm understood analogously is apparently just right: this part of God's knowledge *is* dependent on the prior existence of something, namely, God's nature and ideas, rather than the other way around.

Second, even if we restrict the discussion to God's knowledge of temporal things in the actual world, there are serious problems with interpreting Aquinas as holding that God's knowledge is the efficient cause of all he knows.

To begin with, since on Elders's sort of interpretation, God's knowledge is always the cause of what God knows, it follows that God does not know human evil if he does not cause it. Consequently, on this interpretation, Aquinas has to hold either that God causes human evil, or that he has no knowledge of it and is, therefore, not omniscient. But since Aquinas certainly takes God to be omniscient and also maintains in many places[10] that God does not cause sinful actions, this interpretation has the infelicitous consequence of attributing a fairly obvious contradiction to Aquinas.[11] Worse yet, there are passages in which Aquinas explicitly rejects the position this interpretation has to ascribe to him. So, for example, Aquinas says, "it does not follow that God is the cause of evils because he knows evils".[12]

In addition, since on this interpretation, God causes all human actions in virtue of knowing them, the interpretation appears to commit Aquinas to a determinism that leaves no room for human free will.[13] But even if there were some way to account for human freedom within the all-encompassing realm of God's efficient causality, identical with his knowledge, on this interpretation it is nonetheless God who is the ultimate efficient cause, and so the ultimate agent, of sinful human actions, just in virtue of knowing them. Here the issue is *not* whether human freedom can be reconciled with God's causal activity. It is rather whether God's being the first efficient cause of a sinful human action does not make him responsible for the occurrence of the sinful action he causes.

Finally, on this interpretation, God's knowledge of future contingents should be explainable just as God's knowledge of anything else is, namely, as a function of the causal efficacy of the divine cognition. In fact, there should be no special problem about God's knowledge of future contingents. If God's knowledge of things in time is always causative, then God's knowledge of a future free action should also be adequately explained in the same way: God

knows it in virtue of causing it. But Aquinas manifestly supposes that God's knowledge of future contingents has to be explained in a very different way, in terms of God's eternality.[14] So, for example, he says:

> There is no knowledge of a contingent as future by means of any cognition that is not liable to falsity. Consequently, since there is no falsity or any liability of falsity in the divine knowledge, it would be impossible for God to have knowledge of future contingents if he were to cognize them as they are future ... [But] since the vision of God's knowledge is measured by eternity, which is all at once and nonetheless includes time as a whole ... , it follows that he sees whatever occurs in time not as future but as present ... And so God infallibly sees all contingents, whether they are present to us or past or future, because they are not future to him.[15]

Aquinas here clearly supposes that God's eternity is crucial to explaining God's knowledge of future contingents.

Elders himself reads Aquinas's explanation of God's knowledge of future contingents in this sort of way. Future contingents, he says, "can be considered ... in their causes; [but] since these are not determined to one effect, they cannot give certitudinal knowledge".[16] Instead, Elders argues, in order for God to know contingent states of affairs that are future with respect to us, they must be really present to God in eternity: "Without their being present, God cannot know them with certitude."[17] And the reason Elders gives for this claim is that God "knows these things as they exist in reality. There is no science [i.e., full-fledged, 'certitudinal' knowledge] without existing things as its object."[18]

But, of course, if Elders's interpretation of Aquinas's account of God's knowledge is correct, if for Aquinas God knows things only insofar as he causes them, then to hold that a consideration of future contingent things in their *causes* is insufficient to provide divine knowledge of them is tantamount to saying that God *cannot* have knowledge of future contingents. Furthermore, as I pointed out above, on Elders's interpretation, God's knowledge of anything other than himself is logically prior to and causative of the existence of its object because of the causative nature of divine knowledge. By Elders's own lights, then, it must count as a mistake to say, as he does, that "without their being present, God cannot know them [i.e., future contingents] with certitude" or that "[t]here is no science without existing things as its object". On the contrary, Elders's interpretation is committed to the conclusion that without God's first knowing them, future contingent things and events cannot be at all.

So, if God's all-encompassing knowledge is always and only causative, then not only is God's consideration of future contingents in their causes *sufficient* for his knowledge of them, but, in fact, knowledge of them in their

causes (or in their primary, divine cause) is the *only* way God can know them. In that case, invoking the doctrine of divine eternity to explain the atemporal presence of temporal objects to God's cognition is simply irrelevant to an explanation of God's knowledge of future contingents. As the preceding paragraphs make clear, however, Aquinas certainly does hold that divine knowledge of future contingents must be explained in terms of their atemporal presence to God as objects of his cognition.[19] On the interpretation of God's knowledge as efficiently causal of all God knows, on the other hand, there is not only no need for the doctrine of eternity in an explanation of God's knowledge of future contingents, there is not even any room for it. So either Aquinas's account of God's knowledge of future contingents is inconsistent with his general account of God's knowledge, or Aquinas does not in fact suppose that God's knowledge is always causal.

To my mind, these considerations pose insuperable problems for any interpretation such as that of Elders which takes God's knowledge to be the efficient cause of whatever God knows or of all the things in time in the actual world which God knows.

Problems of Aquinas's account

It is not hard to see how the sort of interpretation represented by Elders's work arises. It draws its main support from a claim Aquinas makes repeatedly. In *Summa theologiae*, for example, Aquinas asks whether God's knowledge is the cause of things, and his answer is a resounding affirmative:

> It must be said that God's knowledge is the cause of things. For God's knowledge is related to all created things as a craftsman's knowledge is related to the things he crafts, but a craftsman's knowledge is the cause of the things he crafts.[20]

In *Summa contra gentiles*, too, Aquinas maintains that "God knows things other than himself insofar as he is the cause of them";[21] and in arguing for this claim he says that

> one has adequate cognition of an effect through the cognition of its cause ... But God himself is, through his essence, the cause of being for other things. And so, since he has the fullest possible cognition of his essence, we must hold that he has cognition of other things as well.[22]

This last passage hints at several other real perplexities in Aquinas's account of God's knowledge which have to be dealt with by any interpretation of his account. For Aquinas, all cognition requires an assimilation between the cognizer and what is cognized,[23] and for there to be such an assimilation

there must be in the cognizer a likeness or form of the thing being cognized.[24] And so Aquinas says that "everything that is understood is understood through some likeness (*similtudo*) of it in the one who understands"; and

> cognizers are distinguished from non-cognizing things in this respect, that non-cognizing things have only their own form, but a cognizer is naturally suited to have a form of something else as well, for a form (*species*) of what is cognized is in the cognizer.[25]

Human beings acquire the forms necessary for cognition from extramental reality. So, in a person who is cognizing a cup, who recognizes the thing she sees as a cup, the epistemically requisite form of *cup* has its immediately operative stimulus in that cup itself, present before her and causally affecting her vision. Or when a person smells bread baking or hears a car crash outside her window or feels an insect running across her arm, she normally has those cognitions because something in extramental reality is causally affecting her senses and providing her intellect with raw material from which it abstracts the requisite forms.

Things are different in the case of God. Even divine cognition requires an intelligible form, Aquinas thinks, but in God's cognition of something other than himself the requisite intelligible form is *not* drawn from the thing cognized. Instead, the form through which God cognizes any and all created things is just his own nature, so that it seems that God cognizes creatures solely in virtue of cognizing himself.

> There are two ways in which something is cognized: one, in itself; the other, in something else ... [A thing is cognized] in something else, ... for example, when a man is seen in a mirror through a form belonging to the mirror ... Now [God] sees things other than himself not in themselves but in himself, insofar as his essence contains a likeness of things other than himself.[26]

So God, unlike human cognizers, does not acquire an intelligible form of a cognized created thing from the thing cognized. Rather, he has cognition of himself and of all things other than himself through just one intelligible form, which is his own nature: "The only intelligible form by which the divine intellect has intellective cognition is God's own essence."[27]

Furthermore, the single intelligible form through which God knows is an all-encompassing, perfectly universal form. "To the extent to which an intellect is higher," Aquinas says, "it can with a single [form] cognize several things, to which a lower intellect can attain only through many [forms]."[28] Therefore, for God's intellect, which is the greatest possible, there is just one perfectly universal intelligible form, namely, the divine essence.

But if God knows things other than himself only in virtue of knowing himself, and if the intelligible form through which God knows is the most universal, then it is not easy to see how God knows individual creatures, including human beings, as they are in themselves.

Finally, Aquinas's account raises a particularly difficult form of an objection commonly leveled against dualism: how could an immaterial mind interact with matter?[29] The question has special force against Aquinas because in his discussions even of human cognition he emphatically denies that the immaterial human intellect can know material things directly. What the immaterial intellect can know directly is only immaterial universals abstracted from the particular material things that instantiate them. The human intellect does know material things, Aquinas thinks, but only in virtue of reverting to the "phantasms", immaterial likenesses acquired through corporeal external senses and processed by corporeal internal senses but accessible to incorporeal intellect.[30] Extrapolating from this feature of his account of human cognition, one can see how an entirely immaterial God might know universals or natures. But it is not clear how God could know material particulars themselves, since, among other considerations, there are no divine corporeal senses through which the divine intellect could be put in touch with particulars. These features of Aquinas's account make it seem as if it is a species of Averroism, in which God can know his own nature and all universals or creaturely natures but cannot know individuals – or at least not material individuals, such as human beings.

Of course, there are excellent reasons for being immediately skeptical about any interpretation of Aquinas's account that makes it look Averroistic – most obviously because, in expressly opposing Averroism, Aquinas claims explicitly that God does know material individuals. What's more, he insists that God knows them with "*proper* cognition". That is, God knows material individuals as individuals, and not just through the natures they instantiate or the species to which they belong. In summing up his argument to this effect in *Summa theologiae*, Aquinas says: "Consequently, we must say that God cognizes things other than himself with proper cognition: not only insofar as they share in the nature of being but insofar as each one is distinguished from another."[31] Again, he says: "God's knowledge must extend all the way to particular things that are individuated by matter."[32] Aquinas thinks that material individuals must be among the objects of God's knowledge because he takes God to be the creator of material individuals initially and to exercise direct providential governance over all of them always,[33] and it is hard to see how God could create or directly govern embodied individuals if he could not know them individually.

The problem is that as Aquinas explains his account of God's knowledge, it does seem to commit him to some species of Averroism, in virtue of his claims that God knows other things just in knowing himself and that the single intelligible form through which God knows everything is the most

universal form. Furthermore, the passages in which Aquinas claims that God's knowing anything other than himself is his causing it also seems to commit Aquinas to a causal form of universal epistemic determinism by an omniscient God. But, in addition to raising serious philosophical and theological difficulties for Aquinas, epistemic determinism and an Averroistic account of God's knowledge are contrary to Aquinas's own explicit, characteristic positions on human freedom and God's knowledge of particulars. Worse yet, universal epistemic determinism and Averroism are apparently incompatible with each other.

I am convinced that the picture of Aquinas's account of God's knowledge that leaves it liable to these difficulties is distorted. And although I cannot solve all the problems his account raises, I can show that it involves neither universal epistemic determinism by God nor Averroism, without its conflicting with considerations of impassibility.

The analogy of angelic cognition

In order to construct a more accurate presentation of Aquinas's account of God's knowledge, it is helpful to work through his theory of angelic cognition. Since Aquinas takes angels to be entirely immaterial and superhuman but non-omniscient beings, and since his understanding of all superhuman cognition is to a considerable extent connected to his understanding of human cognition, his treatment of angelic cognition provides an intermediate account that illuminates what he has to say about divine cognition.

In the first place, according to Aquinas, angels, like all other intellective beings, have cognition through intelligible forms; but they are like God and unlike human beings in cognizing through forms that are *not* taken from objects of cognition. So, Aquinas says:

> The lower intellective substances, human souls, have intellective power that is not complete by nature but is completed in them successively, in virtue of the fact that they get intelligible forms from things. But intellective power in higher spiritual substances – in angels, that is – is complete by nature through intelligible forms, insofar as, along with their natures, they have intelligible forms for understanding all the things that by nature they can cognize.[34]

And elsewhere he says:

> An angel does not cognize individuals through an acquired form at all, because it does not cognize [anything] through a form it gets from a thing; for [if it did, then] in that case things would act on its intellect, which is impossible. Nor does it cognize [an individual] through some form newly infused by God, newly revealing something to the angel. For the forms an angel has in it, which were created along with it, are sufficient [for it] to cognize everything cognizable [by it].[35]

So, unlike a human being, who normally has cognition of a cup in front of her through an intelligible form of *cup* that she acquires in consequence of having been causally affected by a cup acting on her senses, an angel is supposed to cognize whatever it cognizes through intelligible forms provided at its creation along with its nature – its concreated, or innate, intelligible forms. Like God, then, an angel is said to cognize anything other than itself solely through an aspect of itself.

Second, like God and unlike human beings, angels are absolutely immaterial knowers. For that reason, angelic cognition, like divine cognition, is entirely intellective, surpassing human intellective cognition in the degree of universality and the fewness of the intelligible forms it needs in order to cognize things. Characterizing angelic knowledge, Aquinas says:

> God understands all things through his one essence. But the higher intellective substances, although they do understand through more than one form, [in comparison with lower intellective substances] they understand through fewer and more universal forms, more powerful for comprehending things, because of the efficacy of the intellective power that is in them. In the lower [intellective substances], however, there are more forms, which are less universal and less efficacious for comprehending things, to the extent to which [these lower substances] fall short of the intellective power of the higher ones.[36]

Consequently, Aquinas says that, "an angelic mind's cognition is more universal than a human mind's cognition, because it extends to more things using fewer means".[37]

So far, then, it looks as if some of the problems in Aquinas's account of divine cognition affect his account of angelic cognition as well. Since angels are absolutely immaterial cognizers, without corporeal senses, in their case, too, it is hard to see how they could cognize embodied individuals as such. And, as we've just seen, Aquinas does emphasize the universality of their knowledge. Consequently, a kind of Averroism seems to threaten his theory of angelic knowledge, too. Furthermore, angels are supposed to know things other than themselves through intelligible forms built into their natures, not through forms acquired from such things. So, like God, angels seem, mysteriously, to cognize things other than themselves solely by way of a kind of introspection. But how could beings whose cognition depends on innate intelligible forms know material particulars at all unless the existence and behavior of those particulars were predetermined?

Despite these similarities between angelic cognition and divine cognition, Aquinas of course denies that angels know what they know in virtue of knowing what they will, or that angelic cognition is causative at all.[38] So although an intelligible form in an angelic intellect functions as a means of cognition (as does a form in a human intellect or, in God's case, the divine essence itself), angelic intelligible forms do not cause the things angels cognize, anymore than they are drawn from them.

Aquinas is equally explicit in his denial of any sort of Averroism with regard to angelic cognition. Angels, he reasons, must know singular, embodied things: "no one can guard something he is not cognizant of. But angels guard individual human beings ... And therefore angels cognize individuals."[39]

But if it is a mistake to interpret Aquinas's view of angelic cognition as entailing Averroism or causal determinism of an epistemic sort, then the formal similarities between his accounts of angelic and divine cognition provide the beginning of a basis for supposing that it may also be a mistake to see either of those difficulties as entailed by his views of God's knowledge. If we can see how angelic cognition is supposed to work without running into Averroism or causal determinism, we may also gain some insight into the appropriate interpretation of Aquinas's account of God's knowledge.

In approaching problems of divine cognition via a consideration of Aquinas's account of angelic cognition, the following three questions are perhaps the most useful. First, how could an angel cognize individuals, given that angels cognize only universally? Second, how could an angel cognize individuals other than itself without acquiring forms from them? Third, and finally, how could intelligible forms built into an angel's nature at its creation enable it to cognize individuals other than itself unless the existence and behavior of those individuals were predetermined? Considering these questions will put us on the right track for interpreting Aquinas's account of God's cognition.[40]

Cognizing universally

To see how the first question should be answered, it is essential to be clear about what Aquinas means by cognizing universally. In discussing angelic cognition, Aquinas provides this explanation:

> The expression 'cognizing something universally' is used in two ways. In one way, as regards the thing cognized, as [when] one cognizes only the universal nature of a thing. And in this way cognizing something universally is cognizing it more imperfectly, for a person who knew of a human being only that it is animal would cognize it imperfectly. In the other way, as regards the medium of cognizing. And cognizing something universally in this way is cognizing it more perfectly, for the intellect that can have proper cognition of individuals through one universal medium is more perfect than an intellect that cannot do so.[41]

In other words, when Aquinas maintains that angels cognize universally, he does not mean that *what* they cognize is always a universal, as if angels were supposed to have only common natures as objects of their cognition. But what, exactly, is the other sense of 'cognizing universally', the sense in which he does mean to claim that angels cognize universally?

We get some help towards an answer to this question when we recognize that Aquinas thinks that even the human intellect cognizes individuals universally in this other sense. In cognizing anything, the human intellect standardly and primarily apprehends the quiddity, or the *quod quid est*, of a thing.[42] (By '*quod quid est*' here Aquinas means the kind to which something belongs, considered in an unanalyzed way – that is, in medieval terms, the species as distinct from the definition.[43]) Yet, Aquinas claims, the human intellect does cognize material particulars:

> just as we could not sense the difference between sweet and white unless there were one common [internal] sensory power that had cognition of both, so, too, we could not cognize the relation of universal to particular unless there were one power that cognized them both.[44]

But, he goes on to say, the human intellect cognizes material individuals *through* their shared universal:

> Intellect, therefore, has cognition of both [the universal and the individual], but in different ways. For it has cognition of the nature of the species, or of the *quod quid est*, by extending [to it] directly; it has cognition of the individual itself, however, by a kind of reflection, insofar as it turns back to the phantasms from which the intelligible forms are abstracted.[45]

The intellect, in other words, uses an abstract intelligible form – the intellectively abstracted quiddity of a material particular – as the means by which to cognize the particular picked out by the phantasm. But when it does so, the intelligible form is only the medium through or by which the intellect knows the material particular, not *what* it knows: "the intelligible forms by which the possible intellect is actualized are not the intellect's object. For they are related to the intellect not as *what* is understood, but rather as *that by which* it understands."[46]

What Aquinas has in mind here can be elucidated by considering recent neurobiological work. As a result of neurological deficits brought about by

injury or disease, certain patients manifest various kinds of agnosia. A patient who has a visual agnosia, for example, has normally functioning channels for visual input and is in possession of ordinary concepts but cannot use visual data for cognition just because he cannot associate the data with the appropriate concepts in his possession.

In Oliver Sacks's popular presentation of visual agnosia, a patient who had the concept *glove* and who could identify a glove as such if he could touch it was shown a glove by Sacks, who held it up in front of the patient and asked him, "What is this?" "A continuous surface with five outpouchings," the patient promptly replied. When Sacks asked again, "Yes, but *what* is it?", the patient made an effort, using the unreliable method of inferring from a thing's accidents to its *quod quid est* (as Aquinas would say), and guessed, "A coin dispenser?"[47] The patient could sense the material individual presented to his sight; that is why he could readily describe what was presented to his eyes as "a continuous surface with five outpouchings". But the patient could nonetheless not cognize the thing presented to his eyes as a glove precisely because he could not get at the *quod quid est* of what he saw by means of the visual data he had.

On the other hand, the patient's doctor Sacks, who has a completely normal visual system, does recognize as a glove a glove presented to his eyes; and yet, when he does so, he does not for that reason have the *quod quid est* of the glove as the *object* of his cognition. Rather, as Aquinas would say, Sacks has cognition of this material individual, he cognizes the glove as a glove, *through* the appropriate universal intelligible form, by associating the visual data with the concept *glove*.[48]

So, cognizing universally in the relevant sense in which Aquinas thinks angels and humans cognize universally is cognizing a thing by means of a common nature under which it is subsumed. And the cognition of particulars requires cognizing universally in this way; even consciously seeing a cup involves recognizing as something or other what one is being visually affected by. That is why a person with a normally functioning visual system sees a glove as a glove. To see something, for a normally functioning cognizer, is to see it *as* whatever it is, and this is to cognize it universally, in the sense at issue here.

Aquinas also thinks that more powerful intellects are able to cognize particulars as subsumed under fewer, higher universals. So, for example, a little boy may be able to cognize his mother's disposable coffee cup in virtue of being able to apply to it the universal *cup*. But (other things being equal) a chemist who knows the nature of Styrofoam, and a physicist who understands the basic constituents of matter, are equipped to have deeper, fuller cognitions of the same object. They, too, cognize through the universal *cup*, but that universal is subsumed under other universals, which are themselves subsumed under other universals, and so on until we come to the highest universal available to the cognizer in question – perhaps, in the case of the

physicist, the nature of matter itself. The scientists' cognition of the particular locates it within the grand scheme of things.

This feature of cognition seems to be what Aquinas has in mind in reasoning that higher angels must know by subsuming things under fewer universals than lower angels do. He says:

> The higher the angel, the fewer the forms through which it can apprehend the whole realm of intelligible things. We can recognize a kind of instance of this among ourselves, for there are some people who cannot grasp an intelligible truth unless it is laid out for them in particulars, individual case by individual case. And this, of course, is a result of the weakness of their intellects. But there are others, whose intellects are stronger, who can grasp many things on the basis of a few.[49]

So, when we see the second of Aquinas's senses of 'cognizing universally', it is clear how an intellect that is in epistemic contact with individuals cognizes them in virtue of cognizing universally.[50]

Cognizing through concreated intelligible forms

This way of answering the first question about angelic cognition seems to make the second and third questions harder. How could an angel cognize other created things without acquiring intelligible forms from them? A human being cognizes a particular cup through the intelligible form *cup*, but human beings typically get their intelligible forms of cognized objects from the objects themselves.[51] How could intelligible forms built into an angel's nature at its creation enable it to cognize individuals other than itself without acquiring forms from them? Aquinas himself recognizes this problem and formulates it pointedly:

> if through a form concreated along with it [an angel] could cognize some particular when it is present, then [the angel] would have cognized it from the beginning of [the angel's] own existence, while the cognized thing was still future. But that could not be, because cognizing future things belongs only to God.[52]

The solution here depends, first, on recognizing, as before, that in the cognition of a particular the intelligible form is not what is cognized but rather only the medium through which cognition takes place. So, Aquinas says:

> Intelligible forms are related to intellect as sensible forms are related to sense. But a sensible form is not what is sensed; rather, it is that by which a sense senses. Consequently, an intelligible form is

> not what is actually understood, but [only] that by which the intellect understands.[53]

Except in cases of introspectively attending to one's concepts themselves, the intelligible form of a particular is not the object of cognition, on Aquinas's view, but something like a representation of it by means of which the particular is cognized.[54]

It is also helpful to recognize here that, as the current neurobiological research on agnosia suggests, the direct, immediate cognition of things outside the mind involves at least three components. There is (a) just being in epistemic contact with something, as when an agnosia patient with otherwise normal vision receives and initially processes visual data from something visually presented to her. Then there is the higher processing of that visual input, which has two components: (b) possessing a concept or intelligible form[55] through which what one is in contact with can be rendered intelligible, and (c) applying the appropriate concepts or intelligible forms one possesses to that with which one is in epistemic contact. The agnosia patient in Sacks's case is characterized by components (a) and (b) but is unable to achieve (c): he cannot apply the concept *glove*, which he does possess, to the glove in front of him. That is why, although he can describe the features of the glove appropriately, he cannot recognize the glove as a glove. For that reason, his visual agnosia prevents him from having proper cognition of that glove.

The outlines of this tripartite analysis of the process of cognition show up in Aquinas's own explanation of angelic cognition. Aquinas ascribes to a putative objector the objection that angels cannot have any new cognitions just because they have all their intelligible forms or representations built into them at their creation. Aquinas replies that although angels do not acquire any new intelligible forms, they are capable of new cognitions because they can newly *apply* the intelligible forms naturally inherent in them to things that are newly present to them.[56]

So the intelligible forms, the media of angelic *or* human cognition, are something like conceptual lenses. The angelic or human intellect might be thought of as looking through them in order to cognize or render intelligible the things with which the cognizer is (by some means) in epistemic contact. On this interpretation of Aquinas's notion of intelligible forms, it does not much matter whether the conceptual lenses are acquired through experience, human-fashion, or come as part of the cognizer's original equipment. It is easy to suppose that the media of cognition must be acquired from extramental things because it is easy to conflate the different components of the cognitive process and to think of the acquisition of intelligible forms as the sole means of simultaneously making epistemic contact and rendering intelligible the things with which the cognizer is in contact. But that these are distinct components is clearly indicated by the case of the

agnosia patient. When he moves from a bizarre but acceptable general characterization ("*a continuous surface with five outpouchings*") to an incorrect specific characterization ("*a coin purse*") despite his possession of the appropriate concept *glove*, he shows that he is in command of only some and not all of those components. Although the agnosia patient has the intelligible form of a glove (as Aquinas would say) in his intellect before the glove is presented to him, he cannot do what Aquinas thinks that the angels do with the intelligible forms in their minds from the time of their creation, namely, apply it newly to something newly presented to the mind.

Aquinas's account of angelic cognition thus presupposes the sort of distinction among the components of the process of cognition I outlined above; but his discussion of angelic cognition is most helpfully understood as concerned with only components (b) and (c), not with (a), the making of epistemic contact. The agnosia patient makes visual epistemic contact with the glove presented to him because the glove acts causally on his eyes. There is, however, nothing in Aquinas's account of the concreated possession of the intelligible forms in angels or the angels' ability to apply those forms that explains the way in which, on Aquinas's view, angels, who lack senses, make epistemic contact with particular things.

To summarize this brief exposition of Aquinas's account of angelic cognition, then, the claim that angels must cognize universally does not mean that universals are the only objects of angelic cognition. Instead, Aquinas's idea is that naturally inherent, universal intelligible forms are the media through which angels render intelligible particular objects with which they come into epistemic contact. And at least some of the perplexing features of his account of angelic cognition can be cleared up by recognizing that Aquinas is primarily concerned to explain the nature of angelic representations, rather than the way angels make epistemic contact with the particular objects of their cognition.

God's cognition of creatures

These clarifications of Aquinas's theory of angelic cognition help us understand his account of God's knowledge. Among the things perplexing about that account are Aquinas's claims that God cognizes things other than himself in himself, "insofar as his essence contains a likeness of things other than himself",[57] and that God cognizes by means of just one, perfectly universal intelligible form. Both these claims can now be seen as logical extensions of Aquinas's claims about angelic cognition.

Because Aquinas thinks of God as being itself, God's nature is for Aquinas the most universal form through which all beings can be cognized. The grandest unified *metaphysical* Theory of Everything would explain all creatures not in terms of their fundamental particles and forces but in terms of their participation in subsistent being. So for God to cognize created

things in himself, through his own nature, the intelligible form of his being, is to cognize them as deeply and understand them as fully as possible.[58] Nothing in this view of Aquinas's entails that *what* God knows is only universal, or that he knows only common natures and not particulars, any more than the physicist's deeper understanding of matter entails that he cannot know ordinary material individual things such as *this* cup. Similarly, the claim that the only intelligible form for God is his own nature does not entail that God cannot cognize individuals, because that unique intelligible form is simply *the medium through which* God cognizes individuals. So Aquinas says: "God cognizes his effects through his essence in the same way as a thing itself is cognized through a likeness of the thing."[59] As the human intellect cognizes a corporeal individual such as this cup through an intelligible form *cup*, so God's essence serves as the intelligible form through which he cognizes each and every created individual.

(There is, however, this relevant difference between the human intellect and the divine mind. Except in cases of introspection, for a human intellect an intelligible form is *only* the medium through which the intellect cognizes and not *also* what it cognizes. But God not only cognizes eternally through his essence; he also eternally cognizes his essence itself, since he knows himself primarily, and other things as well. And that's why Aquinas says that "God cognizes himself and other things in one cognition."[60])

So in the case of divine cognition, as in the case of angelic cognition, some of what is perplexing in Aquinas's account is cleared up if we take it as a theory of the nature of the similitude or intelligible form through which God knows and the way in which that divine similitude or form renders intelligible everything with which God is in epistemic contact, rather than as a theory about the way in which God is in epistemic contact with creatures or the way in which the one divine similitude is applied to the objects of God's cognition.

Intellective cognition of material particulars

There is, of course, still a problem about how Aquinas thinks an immaterial cognizer, such as God or an angel, can cognize *material* particulars. In the case of the human intellect, Aquinas insists that intellective cognition of material particulars requires the intellect's working together with the senses, because only the senses are in contact with material particulars. How, then, do God and the angels cognize material particulars, since they have no senses?

It is helpful in this connection to be clear about the nature of the problem for Aquinas. On his views, what is the difficulty in an immaterial intellect's cognizing a material object? And why does he think that direct human cognition of material particulars can be had only by means of the senses? Philosophers who raise objections to dualism standardly see a problem in an

immaterial knower's knowing a material object because they suppose that knowledge requires the thing known to act causally on the knower, and they cannot imagine how an immaterial knower could be affected by the causal action of a material thing. But Aquinas would not see the problem in these terms; from his point of view, the main problem lies elsewhere.

Aquinas *would* agree that the intellective cognition of a material particular cannot be explained in terms of the immaterial mind's being directly affected by the causal action of a material object.[61] In this sense, he would be on the side of the contemporary objectors to dualism: for Aquinas, *nothing* material can act causally on the immaterial, not even on the immaterial human intellect. On his understanding of the process of human cognition, a material object of cognition exercises efficient causation in the cognitive process, but only to the point in the process at which Aquinas locates the phantasms, the processed deliverances of the senses.[62] At that point, the direction of efficient causation is reversed. In order for the intellect to cognize anything, the intellect must act causally on the phantasm.[63]

So where the human intellect becomes active in the cognitive process, at the threshold of intellective cognition, the chain of efficient causality exercised ultimately by the extramental material object comes to an end, and the human intellect initiates a causal chain in which the order of causation runs from the intellect to the phantasms, not the other way around.[64] The only causal relationship running *from* the direction of the material object all the way to the intellect is the *formal* causation through which the form of the extramental material object persists in the abstraction produced when the intellect strips away the individuating characteristics retained in the phantasm.

Consequently, for Aquinas the process of arriving at intellective cognition is never a matter of a material object's acting with efficient causality on an immaterial intellect. The claim that the material cannot act causally on the immaterial therefore does not pose problems for his account of the cognition of God and the angels, any more than it does for his account of the cognition had by the human intellect. He does not suppose that even human cognition occurs in virtue of such causation. So the problem for Aquinas of God's cognition of material particulars needs to be formulated differently.

In the first place, the problem as Aquinas sees it does not have to do with matter in a twentieth-century sense, every instance of which he would characterize as a composite of matter and form, but rather with matter apart from any forms. And, second, the problem arises in consequence of Aquinas's theory about how any cognition works. Cognition requires that a form or likeness of what is cognized be in the cognizer; cognition on the part of the immaterial human intellect requires that the forms of the extramental material things it cognizes be abstracted from those things. But a form or likeness of any material object is distinct from that object's matter. So, in acquiring an intelligible form of a material object abstracted from the object

itself, the human intellect is coming into epistemic contact only with something non-material. It is not directly connected with the matter of the cognized object. But, on Aquinas's metaphysics, for material objects, matter is what individuates, not form. If an immaterial intellect is making contact only with the immaterial form of a material object, then it is not in contact with that which renders the object an individual thing.[65]

The real problem here for Aquinas is therefore not that an immaterial intellect cannot be affected by the causal action of a material thing, since on his view intellective cognition does not require such causation, but rather that in the nature of the case the immaterial intellect can come into direct contact only with the immaterial aspects of material particulars. Aquinas says:

> every form as such is universal, and so the addition of a form to a form cannot be the cause of individuation [for material particulars], because however many forms are gathered together at once, ... they do not constitute a particular ... Rather, the individuation of a form depends on the matter through which the form is limited to this or that determinate [thing].[66]

In the case of human intellective cognition, the intelligible forms through which human beings have cognition of extramental material objects are acquired from the cognized material objects, which begin the process of cognition by acting causally on the human senses. But utterly formless matter is entirely inert; because it is pure potentiality, it cannot act on anything. Consequently, matter considered just as such, formless matter, cannot act causally on a human cognizer in any way. Aquinas says:

> Because of the weakness of its being, since it is being only in potentiality, matter [by itself, apart from form] cannot be a source of action. And therefore a thing that acts on our soul acts only through form. And so the likeness of a thing imprinted on a sense and purified through several stages until it gets to the intellect is a likeness of a form only.[67]

Therefore, the human intellect cannot directly cognize the individuating material component in material objects. Consequently, the human intellect cannot know material particulars directly.

The problem of cognizing material particulars is solved as regards human beings because their senses are corporeal and receive corporeal impressions from the material particulars being sensed:

> A sense is a power of a corporeal organ. Now anything whatever is received in something in keeping with the recipient's mode [of being] ... And, therefore, a sense has to receive corporeally and materially a likeness of the thing it senses.[68]

Moreover, Aquinas says:

> the object of any sensory power is a form insofar as it is in corporeal matter. Because matter of this sort is the source of individuation, every power of the sensory part [of the soul] cognizes particulars only.[69]

In other words, the senses, unlike the intellect, can be in contact with the matter of what is cognized, at least in this respect, that the senses are corporeally affected by the material things being sensed. The cognized material object acts causally on the matter of a sense organ and brings about a material change in it. By this means, a sense organ is in contact with the matter of a material object. By reflecting on, or "processing", the input that has its source in such corporeal impressions made by material objects on the corporeal senses, the immaterial intellect itself can cognize matter indirectly in turning to the phantasms. And so, Aquinas says, "the intellect cognizes both [universals and particulars], although not in the same way".[70]

But, of course, this way of resolving the problem as regards human intellective cognition is not available for divine or angelic cognition. God and angels do not acquire intelligible forms from the extramental things they cognize. Angels have their forms of things built into them at their creation by God, and God cognizes all the things he makes through the universal intelligible form that is his own nature. And neither God nor the angels receive corporeal impressions of material objects through senses. How, then, are they supposed to cognize corporeal individuals, including human beings, for instance? Or, to put the question more precisely, how do they cognize the individuating matter in the corporeal individuals they know, if they cannot do so by turning to the products of the senses as human intellects do?

For Aquinas, the answer to the question has to do with the fact that one of the things God creates is matter itself. That is, God not only makes composites of matter and form, as any craftsman or inventor does, but he also creates the formless matter that underlies the forms of any material object. It is this aspect of his creative activity that earns it the designation *ex nihilo*. As the "inventor" of matter, God cognizes it under the perfectly universal intelligible form that is his nature, and so of course he does not acquire his cognition from matter. Instead, he creates matter to instantiate the cognition of it he already has. And by means of this "inventor's" cognition of matter, God cognizes matter *itself* as human knowers cannot do. Aquinas says:

> The being of things, which is common to [their] form and matter, flows from the forms of things in the divine mind, and so these forms are related immediately to both form and matter [in created things] ... And in this way our mind has immaterial cognition of material things, but the divine mind and an angelic mind cognize material things more immaterially and yet [also] more perfectly.[71]

So for God and the angels, it poses no problem that formless matter cannot act on anything, because there is no need for them to acquire the form of matter from matter. The form of matter is antecedently in the mind of God, before he creates matter; and he builds this form into the minds of the angels, together with all other forms, at their creation. The form of matter is therefore available for both God and the angels to apply to material objects in cognition, together with the other forms instantiated in those objects. By this means, the very matter of an extramental material object is intelligible to God and to the angels, in virtue of the form of matter that they possess.

Aquinas thereby has solved the problem of the cognition of material objects by an immaterial cognizer as that problem arises for him, in the context of his metaphysics and his understanding of the nature of cognition. His solution allows him to explain in his terms how it is that an extramental material object is intelligible to an immaterial cognizer who cannot cognize material things through the senses.

Nonetheless, this solution leaves one perplexity unexplained. In the case of the cognition of material objects by a human cognizer, the operation of the senses explains *two* of the parts of the process of cognition. It explains not only how a material object causes a cognizer to acquire some forms of it that are necessary for the object's features and particularity to be intelligible to the cognizer, but it also explains how that cognizer comes into epistemic contact with that very object, rather than some other. In the case of the cognition of material objects by God and the angels, however, Aquinas's account in terms of a form of matter pre-existing in the intellect explains only how the cognized material object in its materiality is intelligible to God or to an angel. It does nothing to explain how God or an angel is in epistemic contact with *this* rather than *that* particular object. Given that the form of matter in the divine or angelic mind is just one form, how is it that by means of it the immaterial mind in question cognizes *this particular* material object and not some other? (I will reserve comment on this problem till the end of this chapter.)

The causative character of God's knowledge

Finally, we are now also in a position to consider Aquinas's claim that God's knowledge is causative. As I explained in the introduction to this chapter, this claim is often interpreted to mean that

(1) God knows everything that he knows in virtue of his knowledge's being the efficient cause of what he knows;

or the weaker version of this, namely,

(2) God knows everything that he knows which is in time in the actual world in virtue of his knowledge's being the efficient cause of this part of what he knows.

On even the weaker claim, our knowing, for example, that Brutus is one of Caesar's assassins depends on Brutus's action; God's knowing that Brutus is one of Caesar's assassins causes Brutus's action. For the reasons given above (as well as for the reasons that follow here), I think this interpretation of Aquinas's claim is mistaken.

It may be helpful here to underline what I am and what I am not denying. I am *not* denying that Aquinas holds any of these claims: (3) God's knowledge is causative (in some sense of 'causative'); (4) God is (in some sense of 'primary cause'[72]) the primary efficient cause of the existence of all created substances in the world; and (5) there are some actions, events, or states of affairs which are efficiently caused by God.[73] What seems to me mistaken as attributed to Aquinas is just claims (1) and (2) above, and the falsity of (1) and (2) is compatible with the truth of (3)–(5).

In my view, the attribution of two assumptions to Aquinas lies behind the mistaken interpretation of Aquinas's account of God's knowledge:

> (Assumption A) the causation which God's knowledge has is efficient causation;

and

> (Assumption B) what is effected by the causation of the divine cognition includes all actions, events, and states of affairs in the world.

I think both assumptions are false as attributed to Aquinas. (And, of course, if Aquinas does not hold the second assumption, then he also does not hold that, for everything God knows, God's knowledge "is itself [efficiently] causative of what is known".[74])

It is helpful to begin by asking carefully about the nature of the causation Aquinas attributes to God's knowledge. Although contemporary philosophy almost invariably has efficient causation in mind when it talks about causation, it is, of course, the case that Aquinas, following Aristotle, recognizes four different sorts of causes: material, final, and formal, as well as efficient.

Now Aquinas identifies God's own nature as the intelligible form through which God cognizes everything:

> God cognizes his own nature perfectly, and so he cognizes it in every way in which it can be cognized. But it can be cognized not only as it is in itself, but [also] insofar as it can be participated in by creatures in some mode of likeness.[75]

So when God's nature is considered as the intelligible form through which God knows other things, the divine nature serves this function because of the ways in which created things can participate in it. In the mind of God, these ways are the divine ideas,[76] forms or likenesses[77] of possible imitations of God's nature. Aquinas says that they play a part in all of God's cognition of entities other than himself.[78]

The divine ideas, Aquinas likes to say, are analogous to the ideas a craftsman has. They are like the pattern the craftsman has in mind before he begins to make anything.[79] His favorite analogy to illustrate what he means by a divine idea is the pattern a builder has in mind as he begins to build a house.[80] It is in this same respect that the divine ideas constitute causes of the things created in accordance with them. In arguing that God's knowledge is the cause of what he knows, Aquinas says:

> the knowledge of God is related to all created things as the knowledge of an artisan is related to artifacts. Now the knowledge of an artisan is the cause of artifacts; for insofar as the artisan operates through his intellect, the form in his intellect is the principle of his operation.[81]

The divine ideas are thus exemplars: any thing God creates has the form it has in imitation of the form that is the divine idea representative of that thing. But then the divine ideas are *formal* causes, not efficient causes:

> A form is, in a certain respect, a cause of that which is formed in accordance with it, whether the forming takes place by way of the form's inhering, as in the case of intrinsic forms, or by way of imitation [of it], as in the case of exemplar forms.[82]

The pattern a builder has in mind as he begins to build a house is the formal cause of the house, not an efficient cause. And so Aquinas says:

> in order for an individual thing to be cognized, the cognitive power must contain a likeness of it in its particularity ... Now the likeness of a cognized thing is in a cognizer in two ways. In one way, [it is in the cognizer] as caused by the thing, as in the case of those things that are cognized through a form abstracted from the things. In the other way, [it is the cognizer] as a cause of the thing [cognized], as

> is evident in the case of an artisan who cognizes an artifact through the form through which he makes it.[83]

It is because he understands the causation of God's knowledge as formal causation that Aquinas says about God's knowledge:

> Natural things are intermediates between the knowledge of God and our knowledge, for we receive knowledge from natural things, of which God is the cause by means of his knowledge. And so, as natural knowable [things] are prior to our knowledge and the measure of it, so the knowledge of God is prior to natural things and the measure of them. In just the same way a house is an intermediate between the knowledge of the artisan who makes it and the knowledge of the person who takes cognition of it from the house when it is already made.[84]

Consequently, when Aquinas says that God's knowledge is causative, he does not mean that God's act of cognition efficiently causes what God knows. He means rather that the divine ideas are formal causes of the things God creates or can create. That is why Aquinas can say in one and the same breath, as he does in the following passage, both that God's knowledge causes what God knows and that God knows things that do not exist because they are not caused to exist by God:

> The cognition of the divine intellect is related to other things as the cognition of an artisan to artifacts since he is the cause of things by his knowledge. But an artisan also cognizes those things which are not yet crafted (*artificiata*) by means of the cognition of his art ... And so nothing keeps there from being in the knowledge of an artisan those forms which are not yet externally produced. Therefore, in the same way, nothing keeps God from having knowledge of those things that do not exist.[85]

If God's knowledge is the formal cause of things, the causation in question is compatible with the non-existence of things, as efficient causation is not. What an efficient cause causes comes into existence; but a formal cause is simply the form of a thing, which may or may not come into existence, depending on whether or not it is brought into existence by the operation of an efficient cause.

These considerations make clear the mistake of attributing to Aquinas either Assumption A or Assumption B above. As I have shown, for Aquinas the causation of God's knowledge is formal causation, not efficient causation, and so he does not hold Assumption A. But for these same reasons, we can

see that Aquinas does not hold Assumption B either. Medievals, including Aquinas, love the matter–form distinction and tend to apply it indiscriminately to virtually anything at all; but they are speaking figuratively when they do so, not literally or strictly.

Strictly or properly speaking, the formal cause of a thing is the form of an entity when it is either a form or a composite of matter and form. Anything that is a form or a composite of matter and form, however, is a substance or an artifact, or a part of a substance or artifact. Acts, events, and states of affairs are not substances, artifacts, or the parts of either, however. There are no artisans of states of affairs; builders build artifacts, not events or acts. The form of the house in the mind of the builder is thus the cause of the existence of the house; it is not the cause of all the states of affairs of the house, such as its being decrepit, or of the events that happen to the house, such as its burning down. And so formal causes are causes of things such as substances and artifacts; they are not causes of acts, events, or states of affairs.

It is therefore also a mistake to attribute Assumption B to Aquinas. The formal causation of God's knowledge is the formal cause of things with forms. Of course, if one knows completely the form of a thing, one thereby knows the features of the thing conferred on it by the form. The builder who knows completely the form of the house knows how many people the house will safely hold, for example. But it remains true that the form of the house in the mind of the builder is not the cause of the collapse of the house when too many people come into it.

Aquinas therefore holds neither Assumption A nor Assumption B. For this reason, interpretations of his account of God's knowledge that ascribe to Aquinas even the weaker claim (2) are mistaken. This conclusion is compatible with supposing that God is an efficient cause as well and that his efficient causality extends even to some acts, events, and states of affairs. The conclusion I have argued for here denies only that God's knowledge alone is an efficient cause and that it is a cause of everything, or everything in time in the world, that God knows. Denying this is not a disadvantage for Aquinas, however; it is rather a necessity, on pain of inconsistency, as I pointed out at the outset of this chapter. Finally, understanding the causation of God's knowledge on Aquinas's account as formal knowledge also rebuts the objection that Aquinas's account entails causal epistemic determinism. Formal causation of a thing is compatible with the absence of causal determination of that thing.

Epistemic contact

Although the preceding considerations resolve some of the problems with which this chapter began, insofar as they make it clear that Aquinas's account of God's knowledge does not constitute a species of Averroism and

that it does not entail divine epistemic determinism of everything God knows, nonetheless an important problem remains. This chapter began with a question about how an omniscient immaterial God knows, a question to which Aquinas's account of God's knowledge seems to offer a detailed, defensible answer. But at least part of what the original question seeks is something that so far has not been addressed. Using the analysis of the process of cognition illustrated by the neurobiological study of agnosia, we can say that part of what is wanted as an answer to the question is an explanation of the way in which an omniscient immaterial God makes epistemic contact with things in the created world.

It is worth noticing here that although this analysis is well illustrated by contemporary neurobiology, the analysis itself is presupposed by Aquinas. So, for example, Aquinas presupposes the distinction between being in epistemic contact with something and rendering intelligible what one is in epistemic contact with. God renders temporal things intelligible in cognizing them through the intelligible form that is his essence, but he is in epistemic contact with temporal things because they are atemporally present to him. So, for example, in explaining God's knowledge of time, Aquinas tends to say things of this sort: "the whole course of time and the things that happen throughout all time are within his view as present and as suited to it".[86]

The third element in the analysis of the cognitive process, namely, applying a concept or intelligible form to what one is in epistemic contact with, is also presupposed in Aquinas's discussions of knowledge. For example, Aquinas says:

> every cognition is in accordance with some form, which is the source of cognition in the cognizer. But this sort of form can be considered in two ways. In one way, in keeping with the being that it has in the cognizer; in another way, in keeping with the relation it bears to the thing whose likeness it is. Considered in the first relationship, it makes the cognizer actually cognizant. Considered in the second relationship, however, it determines the cognition to some determinate cognizable thing.[87]

The intelligible form through which God cognizes his own nature makes him actually cognizant of everything he is in epistemic contact with. But, as Aquinas indicates, there also has to be a certain relationship between the intelligible form and what is cognized, a relationship that "determine[s] the cognition to some determinate cognizable thing".

Aquinas explicitly employs this analysis of cognition even with respect to God's knowledge. As we've seen, Aquinas argues that when an angel has a new cognition of something, it does not acquire a new representation or intelligible form; instead, it merely makes a new application of an

intelligible form it has always had. Aquinas explains this feature of angelic cognition by reference to the divine cognition:

> this applying should be understood in accordance with the way God applies the [divine] ideas to cognize things. [God does] not [apply a divine idea] to something else as a medium [of cognition] that is [itself] cognizable; rather, [he applies it] to the thing cognized as the mode of cognizing [it].[88]

So Aquinas recognizes that the cognitive process involves more than possessing a concept or intelligible form, and here he identifies what else is needed as applying the intelligible form to the cognized thing.

On Aquinas's account of God's knowledge, then, for God, too, direct and immediate cognition of things outside his mind involves at least three elements: (a*) God's being in epistemic contact with everything he cognizes, (b*) God's possessing a concept or intelligible form of what he cognizes,[89] and (c*) God's applying that concept or form to what he is in epistemic contact with.

Most of Aquinas's explicit discussion of God's knowledge is an explanation of (b*), an attempt to say how God has the form requisite for cognition of things other than himself. Aquinas's understanding of the other two elements of God's cognition, however, is evident in what Aquinas says about them in his account of divine knowledge, his speculation about angelic cognition, and his general discussions of intellectual cognition.

Given the pre-eminence of the doctrine of God's absolute simplicity in Aquinas's philosophical theology and the difficulty of accounting for ideas of things in a simple God, the focus of Aquinas's attention is perhaps understandable. But it leaves us with problems, and one of them is the nature of God's epistemic contact with creatures.

Aquinas has a clear view of how epistemic contact is established when a human being cognizes an external object: the thing being cognized has an effect on the cognizer's senses, and that causal connection constitutes the epistemic contact. But, of course, this kind of explanation cannot be what accounts for God's epistemic contact with creatures. So how, on Aquinas's view, does God make epistemic contact with the created things he cognizes?

It sometimes looks as if Aquinas's answer to this question is not very different from the blank response, "He just does!"[90] In replying to questions about God's cognition of particular material things, Aquinas has a tendency to say such things as this:

> God does cognize individuals. For all the perfections found in creatures pre-exist in God in a higher way ... But cognizing individuals is a feature of our perfection, and so it is necessary that God cognize individuals. For even the Philosopher considered it absurd to suppose that there is something that is cognized by us but not by God.[91]

Blank as this standard reply is, however, it does express the leading idea in his approach to an account of God's nature via an extrapolation from human nature: anything we can do (that involves no human imperfection), God can do better.

But a more forthcoming response can also be found in his writings. Aquinas divides all knowledge into two sorts:

> one sort is called the knowledge of vision, through which things that are, or will be, or were, are cognized. The other is the knowledge of simple awareness, through which one cognizes things that neither are, nor will be, nor were, but can be.[92]

And in passages making plain that Aquinas himself finds it acceptable to attribute "a perceptual paradigm of knowledge",[93] analogously understood, to God, Aquinas holds that God must have both these sorts of knowledge. Possibilities that are never actualized are cognized by God

> in accordance with the awareness of simple intellection [i.e., the knowledge of simple awareness]. On the other hand, God cognizes things that are present, past, or future with respect to us insofar as they are in his power, in their own causes, and in themselves. And [his] cognition of them is called awareness [i.e., knowledge] of vision.[94]

There are many other places where Aquinas talks about God's intellective observation,[95] God's view,[96] God's vision,[97] and God's gaze.[98] So the things with which God is in epistemic contact he renders intelligible through the intelligible form that is his essence and that is reflected and particularized in the divine ideas that are the formal causes of created things. But it looks very much as if Aquinas takes God to be in epistemic contact with creatures in virtue of metaphorically or analogously "seeing" them.

The claim that God's epistemic contact with creatures is a kind of "seeing" also helps explain why Aquinas insists on explaining God's knowledge of future contingents as he does. Aquinas takes the doctrine of divine eternity to be required to account for God's knowledge of future contingents; and the point of the doctrine is to support the claim that all the temporal things – whether they are past, present, or future with respect to us – are in fact present with respect to God. But it is hard to understand why God's mode of cognition would require its objects' presence, unless we recognize that Aquinas's attempt to parse divine epistemic contact with created things in terms of God's as it were

"seeing" them. Seeing a thing does require it to be present to sight in some sense.

Aquinas's theory of God's epistemic contact with created things might then be construed as a matter of God's seeing, in some extended sense of 'seeing'. But there are problems with doing so.

The most obvious has to do with God's impassibility. If God's epistemic contact with creatures consists in "seeing" them atemporally, then his cognizing them and their doings does not compromise divine immutability; without time, change is, of course, impossible. But it seems nonetheless that any process which could count as seeing of contingents must also involve reception.[99] And since receiving is a kind of undergoing, it seems that God's "seeing" of creatures must be incompatible with his impassibility.

Now among the kinds of receiving or undergoing Aquinas recognizes, some involve deterioration or improvement; there is, for instance, getting sick and getting better. This is the kind of receiving or undergoing most obviously ruled out by divine impassibility. Then there is the reception or undergoing that is simply a component of completion, the actualization of a subject's natural potentialities.[100] A cognitive faculty's reception of forms is that kind of reception. Aquinas describes this sort of reception or undergoing in this way: " 'undergoing' is [sometimes] used generally for any change, even if it pertains to the perfecting of a nature – as when understanding or sensing is said to be a kind of undergoing".[101]

And, of course, the perfect intellect of an impassible God could not *get perfected*. As Aquinas says, "the divine intellect is not in potentiality but is pure actuality".[102] Furthermore, as I pointed out just above, God cognizes even temporal things not successively but all at once, timelessly; and real potentiality is time-bound. As Aquinas understands the undergoing of cognition, however, it takes time: "Intellect ... is said to undergo insofar as it is somehow in potentiality to intelligible things ... *before* it understands."[103]

So God cannot have either of the sorts of receiving or undergoing at issue for Aquinas, deterioration or being completed or perfected by receiving information.

Nonetheless, it also seems as if God's intellect would not *be perfect* if it weren't somehow timelessly in receipt of what its "seeing" discloses, aware of things without first having been without that awareness. Furthermore, even in the case of the human intellect, the intellect understands by itself acting on data, not by being acted upon. So it seems that it is possible to hold consistently with Aquinas's other views that God's intellect as it were sees things but without undergoing and without being acted upon. In that case, God would "see" things but without there being any violation of his impassibility when he did so.

Even if there were no problem about divine impassibility, however, we might find Aquinas's talk of God's "seeing" mysterious; and the question

analogous to that with which this chapter began might also be raised about it: how does God accomplish this "seeing"? As far as I can see, Aquinas provides no further help in analyzing God's epistemic contact than to hold that God applies his ideas to what he cognizes and that God atemporally "sees" things other than himself. In this respect, then, Aquinas's account is just incomplete.

It is worth noticing, however, that currently standard accounts of human cognition are also incomplete in analogous respects, contrary to what one might suppose. Although it is clear that concepts or mental representations have to be applied to what the cognizer is in epistemic contact with, no one has more than a rudimentary idea of what such application consists in or of what has gone wrong in agnosia patients who are no longer capable of it. Furthermore, although it is true that what is cognized acts causally on the cognizer's senses, for that causal connection to count as *epistemic* contact at all, the sensory data produced in that way must undergo some processing by the central nervous system. Causal contact between some object and say, an eye in a vat would not constitute epistemic contact. But sensory input by itself underdetermines the result of the central nervous system's processing.[104] How is the result of that processing related to the thing cognized, then? Or, to put it another way, how is it that the result of the processing constitutes epistemic contact with the extramental things that generated the sensory input? At the moment, at any rate, nobody knows.[105] The incompleteness of Aquinas's account of God's knowledge looks less surprising when we recognize that contemporary accounts of human knowledge are incomplete in the same way.

Conclusion

I have presented an interpretation of Aquinas's account of God's knowledge as an answer to the question, How does God know what he knows? I've shown one of the misinterpretations to which his account is liable, and I've argued that when his account is properly understood, it commits Aquinas to neither determinism nor Averroism. Insofar as the question about God's knowledge with which I started this chapter tacitly includes a question about God's epistemic contact with what he knows, Aquinas's account will not give us a complete answer. But, as I have suggested, this is a question that has not yet been answered regarding human cognition. It should not therefore be surprising that Aquinas provides no answer for it with regard to divine cognition. Furthermore, as Aquinas's rich, complicated account of divine cognition indicates, he fully realizes that there is more to cognition, divine or human, than epistemic contact. For the aspects of cognition beyond epistemic contact, Aquinas's account of God's knowledge is not only consistent with and illuminating of the rest of his monumental philosophical and theological system but also insightful as regards human cognition.

Part II

THE NATURE OF HUMAN BEINGS

6

FORMS AND BODIES

The soul

Introduction

Many philosophers suppose that the major monotheisms, and Christianity in particular, are committed to substance dualism of a Cartesian sort. Descartes explained his dualism in this way:

> my essence consists solely in the fact that I am a thinking thing. It is true that I may have (or, to anticipate, that I certainly have) a body that is very closely joined to me. But nevertheless, on the one hand I have a clear and distinct idea of myself, in so far as I am simply a thinking, non-extended thing; and on the other hand I have a distinct idea of body, in so far as this is simply an extended, non-thinking thing. And accordingly, it is certain that I am really distinct from my body, and can exist without it.[1]

On this Cartesian view, a person may have a body but is neither identical with it nor composed of it, and an intellectual process such as thinking occurs only in the non-material thing that is the person, not in the body. There are "close" connections between a person and his body. The cognitive processes of the person have effects on the body which that person has, and bodily processes, such as sensations, have effects on the person; so a person and his body interact causally. But intellectual cognitive functions are not exercised in or by the body; they take place in the thinking essence that is distinct from the body.

So understood, Cartesian dualism is widely regarded as false. If it is also the case that the major monotheisms have traditionally been committed to dualism of a Cartesian sort, then in the view of many philosophers the apparent or putative falsity of Cartesian dualism becomes an embarrassment for those religions. As a matter of historical fact, however, it is not true that a Cartesian sort of dualism has been the view traditionally espoused by all the major monotheisms. Aquinas, whose views surely represent one major strand of one major monotheism, is familiar with an account very like that

of Cartesian dualism, which he associates with Plato; and he rejects it emphatically.

In this chapter, I will explore Aquinas's position. I will look at his rejection of a Cartesian sort of dualism in his attitude towards Platonism with regard to the soul and at the position he adopts in place of it. I will also consider the broader metaphysical issues within which Aquinas's account of the soul is situated, and I will examine the explanation Aquinas's account gives of the theological doctrine of the afterlife. Then I will turn to the vexed business of taxonomy. How should Aquinas's position be identified? For example, where – if anywhere – on the contemporary spectrum of opinions about the relations of mind and matter should Aquinas's account be located? Finally, I will briefly discuss the way Aquinas's account sheds light on contemporary attempts to find some intermediate between Cartesian dualism and eliminative materialism.

Aquinas's rejection of Cartesian dualism

In building his alternative to a Cartesian sort of dualism, Aquinas is guided by two complex, culturally conditioned intuitions, each of which can be conveniently summed up by a biblical passage. The first is God's speech to fallen Adam, which Aquinas takes to apply to all subsequent human beings: "dust thou art, and unto dust shalt thou return" (Gen. 3:19). The second is the line of Ecclesiastes about human beings at the moment of death: "Then shall the dust return to the earth as it was, and the spirit shall return to God who gave it" (Eccles. 12:7). On the first intuition, a human being is a material object, made out of the same sort of constituents as the earth is, and subject to dissolution by having those constituents resolved back into earth. On the second intuition, a human person survives death, whatever may happen to the body, because the spirit or soul continues to exist after the dissolution of the body. Aquinas thinks he can accommodate both these intuitions with his account of the human soul.

Sometimes the main difficulty in interpreting Aquinas lies in ferreting out just what his position on some subject is; interpreting his view of the nature of knowledge, for example, presents this sort of difficulty. But sometimes it is quite clear what Aquinas is claiming, and the difficulty in interpreting him lies in figuring out what his claims mean and why he supposed them to be true. Coming to grips with Aquinas's account of the soul presents the latter sort of difficulty. As is well known, Aquinas takes the soul to be the form of the body. What is much harder to grasp is what Aquinas means by this claim. A second and equally difficult question is whether his conception of the human soul will in fact allow him to reconcile both his apparently conflicting intuitions about the nature of a human being, namely, that a human being is made of matter, on the one hand, and that a human spirit survives death, on the other. It will help with both ques-

tions to begin by seeing the depth of Aquinas's commitment to the view that human beings are material objects and the vehemence with which he rejects what we tend to call 'Cartesian dualism'.

The position we commonly refer to as 'Cartesian dualism' Aquinas associates with Plato and thinks of as Platonism's account of the soul. As Aquinas understands Plato:

> Plato said ... that a human being is not something composed of soul and body; rather, a human being is a soul using a body, so that the soul is understood to be in the body somewhat as a sailor is in a ship.[2]

Aquinas typically rejects this position in no uncertain terms. So, for example, he says:

> Plato claimed that a human being is not a composite of soul and body but that a human being is the soul itself using a body, just as Peter is not a composite of a human being and clothes, but rather a human being using clothes. But this position is shown to be impossible. For an animal and a human being are natural, sense-perceptible things. But this would not be the case if a body and its parts did not belong to the essence of a human being and of an animal. Instead, on Plato's view, the whole essence of both a human being and an animal would be the soul, although the soul is not anything sense-perceptible or material. And for this reason it is impossible that [something that is] a human being and an animal be a soul using a body.[3]

In another place, he says:

> The difficulty of this question [whether a soul separated from the body can intellectually cognize something] stems from the fact that while the soul is conjoined to a body, it cannot intellectually cognize something without turning itself to phantasms ... But if this is not because of the nature of the soul but rather happens to it by accident because it is tied to a body, as the Platonists thought, then this question is easily resolved. For then when the impediment of the body is removed, the soul would return to its own nature, so that it could intellectually cognize intelligible things simply, as other separate substances [i.e., angels] do, and not by turning itself to phantasms. But on this view the soul would not be united to the body for the good of the soul, because on this view a soul united to a body would understand less well than when it is separated from the body ... and this [position] is irrational.[4]

Furthermore, Aquinas also raises an objection commonly leveled against Cartesian dualism. According to Aquinas, Platonists will have trouble explaining the way in which soul and body are joined. Platonists, Aquinas says, are committed to supposing that the soul is united to the body through some intermediary, because diverse, distinct substances cannot be bound together unless something unites them. And so certain Platonists postulate one or another spirit or humor as the medium between soul and body. But none of these devices is necessary, Aquinas says, if the soul is understood as the form of the body.[5]

As these and many other passages make clear, then, Aquinas recognizes a position he associates with Platonism which is very similar to, if not identical with, what we commonly take to be Cartesian dualism; and Aquinas rejects it unconditionally. Aquinas's emphatic repudiation of such Cartesian (or, as he would say, Platonic) dualism should be kept in mind as we consider Aquinas's own position.

Form as configuring: material forms

Because Aquinas takes the soul to be the form of the body and because of the focus on form in his account, it will also be helpful to say something briefly about Aquinas's general account of form.[6] Aquinas discusses forms in connection with God, angels, human beings, and non-human material objects. For our purposes in this chapter, it is perhaps best to begin with Aquinas's view of the nature of the forms of non-human material objects, which he sometimes calls 'material forms'.[7] Although Aquinas thinks that not all forms are forms of material objects, nevertheless on his view all material things are composites of matter and form. That is, earthworms, daisies, rocking chairs, amethyst clumps, and bread dough, share with all other material things, including human beings, the characteristic of having both matter and form as their metaphysical constituents.

A substantial form is the form in virtue of which a material composite is a member of the species to which it belongs, and it configures prime matter. The complete form (the substantial and accidental forms taken together) of a non-human material object is the arrangement or organization of the matter of that object in such a way that it constitutes that object rather than some other one and gives that object its causal powers. In general, form for Aquinas is not static but dynamic. That is why Aquinas thinks that when we use the names of the living body and its parts for the dead body and its parts, we use those words equivocally. The soul is the substantial form of the human body, and death separates it from the matter it previously organized. Once a human being dies and the soul is gone, Aquinas says, we use such words as 'flesh' or 'eye' equivocally if we apply them to parts of the corpse.[8] At death, the soul is replaced with a different, non-animating substantial form. The matter of the body is then configured in a substantially different

way and so has a form different from the one it had before death.[9] That is why the body can be called 'a human body' only equivocally even immediately after death.

Unlike some of his contemporaries, Aquinas thought that any given substance has only one substantial form.[10] That is, a material substance such as a cat does not have one substantial form in virtue of which it is a cat, another in virtue of which it is an animal, a third in virtue of which it is a living thing, a fourth in virtue of which it is a material thing, and so on. On Aquinas's view, there is just one substantial form for any substance which makes it what it is; the one substantial form of a cat makes the cat a material object, a living thing, an animal, and a cat. When Aquinas says that the soul is the form of the body, he means that it is the single, substantial form of the body.

On Aquinas's view, as we increase complexity in systems, even systems of inanimate things, properties emerge which are properties of the whole system but not properties of the material parts of the system. For example, he says:

> the nobler a form is, the more it dominates corporeal matter and the less it is submerged in it and the more it exceeds it in its operation or power. And so we see that the form of a mixed body has a certain operation which is not caused from the qualities of the elements [of which that body is composed].[11]

And elsewhere he says:

> to the extent to which a form is more perfect, to that extent it surpasses [its] corporeal matter ... For the form of an element does not have any operation except that which arises by means of the active and passive qualities which are the dispositions of the corporeal matter [it informs]. But the form of a mineral body has an operation that exceeds the active and passive qualities ... as, for example, that a magnet attracts iron ... A vegetative soul has an operation which is aided by the organic active and passive qualities [of the matter it informs] but nonetheless it can surpass a quality of such a sort ... A sensitive soul has an operation to which the active and passive qualities [of the matter it informs] can in no way extend, except to the extent to which they are required for the composition of an organ by means of which this operation is exercised.[12]

On Aquinas's account of form, then, the fact that material objects are composites of matter and form means that even inanimate material objects can have emergent properties, and these emergent properties may bring with

them further emergent properties, such as causal potentialities which belong to the whole but not to its parts.

It is not hard to illustrate Aquinas's idea with examples from contemporary biology. So, for example, the normal prion protein differs from the pathological prion protein that causes mad cow disease and its human variant in virtually no respect except the three-dimensional arrangement of the molecule. But normal prion protein is an innocuous part of ordinary neurons, while the differently structured disease-causing prion protein can afflict brains with spongiform degeneration.[13] Now the shape of a molecule results from the configuration of the components of the molecule, from their chemical and physical properties and the biochemical processes by which they causally interact with each other. The shape of the molecule is thus not just a sum of the shapes of the parts of that molecule; rather, the shape is an emergent property of the molecule as a whole.[14]

There are, of course, different understandings of the notion of emergent property.[15] As I am using 'emergent' here, a property is emergent in case it is a feature or property of a whole or system, is not a property of the parts of that system, and can be explained in terms of the properties of the parts of the system and the causal interactions among the parts.[16] On Aquinas's account, a thing may also, however, exemplify what John Searle calls "a much more adventurous conception" of emergence, in which a feature of the whole cannot be explained just in terms of the properties of the individual parts of the whole and the causal interactions among those parts.[17] In virtue of its shape (which is a feature of the whole system), the disease-causing prion protein has the causal power to destroy brain tissue (a causal power that is itself another feature of the whole system). But, for some large proteins, the shape of the biologically active molecule does not result just from the properties and causal interactions among the atoms that constitute the molecule;[18] and knowing the molecule's constituent atoms and the way those atoms can interact with one another is not enough to explain or predict the shape of the biologically active molecule. That is because the shape is produced by the interaction of the atoms of the molecule with enzymes or other molecules that catalyze folding.[19] But a molecule catalyzing folding is not itself a part of the prion protein being folded or its parts, and so the causal properties of the pathological prion protein cannot be explained just in terms of the parts of that protein itself. In this sort of case, then, the feature of being able to destroy brain tissue is emergent in Searle's "more adventurous" sense of 'emergent'.[20]

Furthermore, although accounts of emergentism are typically couched in terms of emergent *properties*, on Aquinas's way of thinking about material objects what can emerge when form is imposed on matter is not just properties but substances. When material components are combined into something higher level with a particular configuration, a substance will

come into being.[21] So, for example, expounding a view of Aristotle's, Aquinas says:

> sometimes a composite has its species from something one, which is either a form ... or a composition ... or an organization ... In such cases, it must be the case that a composite is not those things out of which it is composed, as a syllable is not [its] letters. Just as this syllable 'BA' is not identical to these two letters 'B' and 'A', so neither is flesh identical to fire and earth [the elements of which it is composed]. And [Aristotle] proves this in the following way. If those things out of which the composition is formed are dissociated or separated from one another, ... the whole does not remain after the dissolution, just as flesh does not remain once [its] elements are separated [from each other], and the syllable does not remain once its letters are separated [from each other]. But ... the letters remain after the dissolution of the syllable, and fire and earth remain after the dissolution of the flesh. Therefore, a syllable is something more than [its] letters ... and in this way, similarly, flesh also is not only fire and earth (or heat and cold, by virtue of which the elements are commingled) but rather there is something else by means of which flesh is flesh.[22]

Aquinas's account is thus anti-reductionistic.[23] It is not true on his account that a material whole is nothing but its material parts or is identical to its material components.[24] The configuration of the whole will sometimes confer features, such as causal powers, on the whole which are not shared by the components of the whole.

In general, then, a substantial material form is the configurational state of a material object that makes that object a member of the kind or species to which it belongs and gives it the causal powers characteristic of things of that kind.

Forms as configured substances: angels

There is, however, another kind of form that plays an important role in Aquinas's thought. This is the sort of form that does not configure matter.

In arguing that God is not composed of matter and form, for example, Aquinas says:

> every agent acts by means of its form. And for this reason, a thing is related to its being an agent in the same way as it is related to its form. Therefore, it must be that something which is first and of itself an agent is primarily and of itself a form. But God is the first

> agent, since he is the first efficient cause ... Therefore, through his essence God is form.[25]

Unlike material forms, the form that is God does not configure matter. More importantly, but equally obviously, the form that is God is not dependent on matter for its existence. Rather, it exists of itself, an immaterial and independently subsistent form. Aquinas explains the difference between a material form and a form entirely independent of matter in this way. He says:

> Those things which are composed of matter and form are not immediately an entity and one; rather, matter is a potential entity (*ens in potentia*) and becomes an actual entity through the advent of a form, which is for matter a cause of being. But a form does not have being through another form. And so if there is a subsistent form, it is immediately an entity and one.[26]

Clearly, there is a great difference between form of the sort that God is and the material forms informing non-human material objects. The doctrine of simplicity so complicates the discussion of God's nature, however, that focus on God as form is almost certainly more trouble than help in understanding Aquinas's notion of subsistent form. But we can readily enough leave considerations of God to one side because there is a useful and less complicated discussion of subsistent form in Aquinas's account of the angels. Aquinas himself makes a comparison of God and angels on this score; in the course of examining essence and accidents in angels, he says:

> a simple form which is pure act cannot be the subject of any accidents, because a subject is related to accidents as potentiality to actuality. And only God is of this sort [i.e., a simple form which is pure act] ... But a simple form which is not its own being but is related to it as potentiality to actuality can be the subject of accidents ... and such a simple form is an angel.[27]

So, like God, an angel is form existing on its own.

Aquinas does consider the question whether an angel is a composite of matter and form, and he discusses the answer that an angel is made out of form and a special sort of matter, a spiritual matter; but he rejects this answer decisively. An angel is not a sort of ghost, composed of ghostly stuff. Instead, speaking of angels, Aquinas says, "every intellectual substance is altogether immaterial."[28] So, for Aquinas, an angel is a subsistent immaterial form.[29]

We are naturally inclined to wonder how anything entirely immaterial could exist on its own, but for Aquinas the intuitions go the other way around. For example, in explaining that angels are incorruptible, he says:

> nothing is corrupted except in virtue of the fact that its form is separated from matter. For this reason, since an angel is a subsistent form itself ... , it is impossible that its substance be corruptible. For what belongs to something of itself (*secundum se*) can never be separated from it ... But *being* belongs to a form of itself, for anything is a being in actuality insofar as it has a form, whereas matter is a being in actuality through a form. Therefore, a composite of matter and form ceases to be in actuality in virtue of the fact that the form is separated from the matter. But if the form subsists in its own being, as it does in the case of the angels, ... it cannot lose being. And so the immateriality of an angel is the reason why the angel is incorruptible of its own nature.[30]

Elsewhere, in the course of arguing that the human soul is not a composite of matter and form, Aquinas says:

> although the soul is subsistent of itself (*per se*) it does not follow that it is composed of matter and form, because a form apart from matter can also subsist of itself. For although matter has being through a form and not conversely, nothing keeps a form from subsisting without matter, even though matter cannot exist without form.[31]

In addition, the immaterial form that an angel is can act and can engage in the activities characteristic of persons, namely, thought and volition. On Aquinas's view, angels have both intellect and will.[32] In comparing the cognitive and conative capacities of human beings and angels, Aquinas says:

> in our soul there are certain powers whose operations are exercised by means of corporeal organs, and powers of this sort are acts of certain parts of the body, as vision in the eye and hearing in the ear ... But angels do not have bodies naturally united to them ... and so the only powers of the soul that can belong to them are intellect and will.[33]

But this is an advantage for the angels, not a defect in them. As Aquinas goes on to say: "it is appropriate for the order of the universe that the highest intellectual creature [i.e., an angel] be entirely intellective and not only partly [intellective], as our soul is."[34]

So an angel is a form; and in the case of angels, the form in question is an immaterial substance that exists on its own, with a certain set of capacities and powers superior to that of human beings, who are embodied. Clearly, a form of this sort is not a configurational state. Rather, it is a substance or thing that is itself configured in a certain way but that (like

the form that is God) does not configure anything else, as material forms configure matter.

How are we to understand the conception of form that allows Aquinas to take both immaterial angels and the configuration of prime matter in material substances as forms? One way to think about his view is that, for Aquinas, to be is to be configured or to have a form; and everything, material or immaterial, is what it is in virtue of a form. We are inclined to suppose that there is something about matter itself which allows it to be configured. (Or perhaps we are so familiar and comfortable with the notion of configurations of matter that we don't suppose matter's ability to be configured requires any explanation.) But for Aquinas the ability of matter to be configured is just a consequence of the fact that matter has being of some sort. It was Augustine's position that being is a matter of having order, species, and mode, and Aquinas can be understood as adopting and developing this Augustinian sort of idea. An angel, for Aquinas, is immaterial but configured since it has order and species, that is, since it is a kind of thing with one rather than another set of characteristics; and anything that has being – whether that thing is material or immaterial – will be like this. Just in virtue of being, it will have configuration or form. Understanding this point helps to explain why although Aquinas is perfectly content to deny matter of God, he refuses to deny form of God: being, even divine being, is being configured.

The soul as subsisting form configuring matter

If a material form is a configurational state configuring matter and an angel is a configured immaterial subsistent form, what is the human soul? The end of a long story is that, in Aquinas's universe of spirit and matter, the human soul has a share in both the spiritual and material worlds. For Aquinas, the metaphysical world is ordered in such a way that at the top of the metaphysical hierarchy there are forms – the angels (or maybe God and the angels, depending on how one takes the implications of divine simplicity) – which exist independently and are not configurational constituents of anything else. Near the bottom of the hierarchy are forms that configure matter but do not exist independently of matter as configured things in their own right. The form of an amethyst is like this. And in the middle are human souls, the amphibians of this metaphysical world, occupying a niche in both the material and the spiritual realm. Like an angel, the human soul is itself a configured subsistent form; but like the forms of other material things, the human soul has the ability to configure matter.

The human soul, then, is a configured configurer. On the one hand, like an angel, it is able to exist and function on its own, apart from matter.[35] On the other hand, the human soul is not, as Plato thought, a spiritual substance moving a body which is also a substance in its own right; rather,

the human soul is the substantial form constituting the material substance that a human being is, and it configures matter, as material forms do.[36] So, for Aquinas, the human soul is the noblest and highest of the forms that configure matter,[37] but it is the lowest in the rank of intellectual subsistent forms, because it is mixed with matter, as the intellectual subsistent forms that are angels are not.[38]

Aquinas sums up his position this way:

> the [human] soul has subsistent being, insofar as its being does not depend on the body but is rather elevated above corporeal matter. Nevertheless, the body receives a share in its being, in such a way that there is one being of soul and body, and this is the being of a human.[39]

In fact, he goes on to say,

> no part has the perfection of its nature when it is separated from [its] whole. And so since the soul is a part of human nature, it does not have the perfection of its nature except in union with the body ... And so, although the soul can exist and intellectively cognize when it is separated from the body, nonetheless it does not have the perfection of its nature when it is separated from the body.[40]

Now this view of the soul is the conclusion of a complicated discussion. To understand it, it may be helpful to begin with Aquinas's general concept of soul. The Latin translated 'soul' is Aquinas's generic term for the substantial form of a material object that is living. On his use of the term, then, plants have souls, too, not in the sense that they enjoy being talked to or in the sense that they may be reincarnated as something higher up the ladder of being in the next life, but only in the sense that plants are living things. On his view, a plant has a soul in virtue of the fact that it has a configuration of matter which allows for nutrition, growth, reproduction, and the other sorts of activities common to living things. Non-human animals have souls, since they, too, are living things; but the configuration of their matter allows them an operation not possible for plants, namely, perception. Unlike human souls, the souls of plants and non-human animals are nonetheless material forms, and even a material form that is a soul goes out of existence when the material composite it configures goes out of existence.[41]

The substantial form that configures a human being allows for still further sets of operations, namely, intellective and volitional processes. Because the human soul has this distinctive set of capacities, Aquinas tends to call it 'the intellective soul', or 'the rational soul' to distinguish it from the nutritive soul of plants and the sensitive (i.e., capable of perception) soul of animals generally. The intellective soul is thus that configuration of

matter on the basis of which something exists as this living human body. There is not a configuration of matter that makes the body a human body and then another configuration that is the intellective soul.[42] As Aquinas says: "There is no other substantial form in human beings apart from the intellective soul."[43]

In virtue of this one form, a human being exists as an actual being, as a material object, as a living thing, as an animal, and as a human being with cognitive capacities.[44] For this reason, Aquinas tends also to call the soul the act of the body; the soul configures matter in such a way that the matter is actually a living human body.[45]

Since he takes the soul to be a kind of form, Aquinas holds that the soul is immaterial; the immateriality of the soul is for him a direct consequence of his view of the soul as a form.[46] Similarly, he takes the soul to be simple in virtue of its being an essence or nature. A soul is not simple in the way a point is,[47] Aquinas says; rather it is simple just in the sense that it is not the sort of thing that has a certain quantity.[48] On the other hand, considered with respect to what it effects rather than with respect to what it is – that is, considered in its powers or operations – the soul is manifold rather than simple, and the various parts of the body are configured by it in differing ways.[49]

Furthermore, because Aquinas sees the soul as the configuring form of the body, he says:

> although the soul is incorruptible, it is nonetheless in no genus other than [the genus] *body*, because since it is part of human nature, it does not belong to the soul itself to be in a genus or a species.[50]

In addition, as configuring matter, the soul has a spatial location; while the body is alive and the soul configures it, the soul is located where the body is.[51] Aquinas's views on this point are somewhat complicated. We can take the form of the body to be a whole in various ways, he says. Considered with regard to the wholeness of essence, for instance, the whole soul is entirely in each part of the body, just as whiteness is entirely in each part of a completely white thing. We can also, however, consider a thing whole with respect to its operations. Considered just with regard to wholeness of operation, the whole soul is not in each part of the body, since the operations of the soul are localized in various parts of the body, as, for example, sight is (on his view) localized in the eyes.

Some operations, such as intellect and will, are not localized in any particular organ of the body, Aquinas thinks,[52] although he does take it on medical authority that a lower-level cognitive faculty (which he calls 'particular reason') is located in the brain.[53] Nonetheless, he does not hold, as Descartes apparently did, that higher cognitive functions occur only in the

soul and not in the body. On the contrary, Aquinas thinks that there is something misleading about attributing cognitive functions just to the soul itself. Rather, even such higher cognitive functions as understanding are to be attributed to the whole material composite that is the human being. So, for example, he says: "We *can* say that the soul understands in the same way that we can say that the eye sees; but it would be more appropriate to say that *a human being* understands *by means* of the soul."[54] And he specifically identifies the intellect itself with the form of the body: "the intellect, which is the source of intellective function, is the form of the human body".[55]

Finally, as his rejection of a Cartesian sort of dualism has made clear, Aquinas does not identify a human being with his soul.[56] Instead, it is his view that "a human being is not a soul only but rather a composite of soul and body."[57] (There is something redundant about this description of the composite since Aquinas thinks that there is a living human body only when matter is configured by the form that is the soul.[58] Given his view that the soul is the single substantial form of a living human body, we would expect him to say instead that a human being is a composite of matter and soul, not body and soul. Nonetheless, 'body and soul' is a common Thomistic description of the material composite that a human being is. It may be that the problem here is an artifact of translation; in some contexts, the Latin word translated 'body' ('*corpus*') refers just to matter.[59] Alternatively, Aquinas thinks that a human being is generated when the human soul replaces the merely animal soul of the fetus in the womb and that a human being is corrupted or decomposed when the human soul leaves the body and is replaced by whatever other substantial form is in the dead corpse.[60] And so he may use the Latin translated 'body' to refer to what is configured in these different ways in the transitions from fetus to living thing to corpse.)

It is therefore clear that, for Aquinas, the human soul resembles material forms in configuring matter and constituting a material object the kind of thing it is with the causal powers characteristic of things of that kind.

Aquinas on form: form as configured

At this point, it is not so difficult to see how Aquinas's account fits the first culturally conditioned intuition that shapes it, as I said at the outset of this chapter, namely, the intuition that human beings are dust and will return to dust. On his account, a human being is a material composite, with matter configured in a certain way by the form that is the soul. When the original configuration is lost and the composite begins to decompose, as happens at the death of a human being with the loss of the form that is the soul, that human being ceases to exist. But it is not so easy to see how Aquinas's account can accommodate the second culturally conditioned intuition informing it, namely, that at death the human soul does not cease to exist but rather persists when the composite of soul and body disintegrates.

That is, it is not immediately apparent how the view of the soul as configuring matter is compatible with the view of the soul as a configured subsistent form. We are naturally inclined to see little or no problem in the notion of an intellective configuration of matter (indeed, certain materialists suppose that matter configured in the way that the matter of the brain is configured just *is* the mind); but we tend to find problematic (or worse) the notion of a subsistent intellect existing and functioning apart from matter. In fact, at this point, we may think that Aquinas's general metaphysical account of the forms of material objects cannot accommodate the claim that the form which is a human soul persists and engages in mental acts after the death of the body. If the soul is the configuration of the matter of a human body, we might think, it must cease to exist when the body ceases to exist. How could a configuration of matter exist without the matter it configures?

Aquinas is aware of the tension between his two intuitions, and our sort of objection would not have surprised him. He himself imagines an objector making similar points. If the human soul is the form of the body, a putative objector asks, then it must be the case that it depends on the body for existence. But what depends on something else for existence, the objector protests, is not a thing and cannot exist on its own; consequently, neither can the soul, if it is the form of the body.[61] Elsewhere Aquinas also considers this objection: "forms dependent on matter as regards being do not have being themselves, strictly speaking; rather, the composites have being through the forms."[62] Therefore, the objection implies, the soul, which is the form of the body, has its being only in the being of the body and cannot exist or act apart from it.

But I point to this discussion in Aquinas's thought only to leave it to one side, partly because his reply to objections of this sort relies on a premise which is less believable to contemporary philosophers than the conclusion it is meant to support[63] and partly because, for Aquinas himself, the problem of the tension between his two intuitions presents itself the other way around. For him, the great difficulty lies in supposing that a subsistent form capable of existing and operating independently of matter is also the sort of thing that configures matter. Furthermore, even contemporary philosophers must grant that an immaterial mind is possible. An argument for the impossibility of an immaterial mind would be in effect an argument against the existence of God, and so far no one has produced such an argument that has garnered any substantial support. If an immaterial mind is possible, however, then perhaps the main obstacle to seeing Aquinas's views of the soul as consistent is the problem he himself addresses, namely, whether an immaterial mind can also be the form of the body, whether, that is, a configured subsistent form capable of existing apart from matter can also be a configurer of matter.

In discussing the problem as it presents itself to him, Aquinas canvasses the views of those thinkers known to him who, because of this sort of worry,

concluded that the intellective soul could not be a matter-configuring form; the Cartesian sort of dualism Aquinas attributes to Plato is one of the views he discusses in this connection. Aquinas argues vehemently against each such view before going on to face what seems to him the hard question. He says, "And for these reasons it is evident that the soul is the form and quiddity of such a body ... But *how* this can be must be investigated."[64]

His investigation is not likely to be persuasive to contemporary readers. It consists in arguing that the human soul is the *highest* in the rank ordering of all the forms configuring material objects, because, unlike material forms, it has an operation (namely, intellective cognition) which surpasses the capacities of matter altogether, and the *lowest* in the rank ordering of subsistent forms able to exist independently of matter. Consequently, in the ranking of forms, the human soul is located right at the boundary between the material and the spiritual. For this reason, the soul partakes of some of the features of the spiritual world, but it is also able to be in contact with matter, so that the body informed by the soul is the highest in the order of material objects. Citing what he takes to be a Dionysian principle, Aquinas says:

> the highest of the lower order is always in contact with the lowest of the higher order ... And therefore the human soul, which is the lowest in the order of spiritual substances can communicate its being to the human body, which is most noble, so that one [thing] arises from the soul and the body, as from form and matter.[65]

Although Aquinas's argument here rests on premises more likely to be persuasive in his time than ours, his general idea may seem more plausible to us if we see that, in an analogous sort of way, we are also accustomed to the notion of an independently existing thing, configured in a certain way, that is nonetheless able to configure matter. So, for example, an enzyme catalyzing protein folding is an independently existing molecule with a complex configuration of its own. But it is also a configurer. When it is bound in the right way to a protein, it helps to fold the protein molecule, thereby reconfiguring that molecule in such a way as to make it biologically active. So as a configured thing, it can exist apart from the thing it configures; but it can also configure the matter of the protein it folds into a different form with different causal capacities from those the protein had before being so configured. A protein-folding enzyme is therefore a kind of configured configurer.

Something analogous can be said about the human soul on Aquinas's view. Of course, there are also significant disanalogies between the case of the enzyme and the case of the soul. Here are just some of them. (1) What is a configured configurer in the case of the enzyme is a matter-form composite; in the case of the soul, it is only a form. (2) The enzyme

configures something which is a matter-form composite itself; the soul configures only unformed matter. (3) When the enzyme configures a protein, the result of the configuration is not one substance – the enzyme and the protein bound together in the process of folding the protein do not constitute one super-molecule; but the soul and the matter it configures do form one substance, an individual human being.[66] The example of the protein-folding enzyme thus cannot be taken as explanatory of everything perplexing in Aquinas's account of the soul; but it does perhaps serve as a heuristic example, helpful for making more plausible the notion of a configured configurer.

The special case of the soul

Understanding the soul in this way, as a configured configurer, a thing able to exist independently of matter but also able to configure matter, helps to explain some of the puzzling things Aquinas says about it.

For example, Aquinas takes the forms of material objects generally to come into existence with the existence of their composites; and although God is the ultimate or remote cause of the existence of such forms, the proximate cause is just the cause that brings about the existence of the composite. After canvassing various opinions that he takes to be mistaken about the forms of non-human material objects, Aquinas summarizes the flaws of those opinions in this way:

> All these [mistaken] opinions seem to have developed from a common root, because they were all seeking a cause for forms as if the forms themselves came into being in their own right. But, as Aristotle shows ... , what comes into being, properly speaking, is the composite. Now the forms of things that are corruptible sometimes exist and sometimes do not exist, without its being the case that they themselves are generated or corrupted; rather the composites are generated or corrupted ... So since like comes to be from like, we should not seek some immaterial form as the cause of corporeal forms, but rather some composite ... In this way, then, corporeal forms are caused not as infused from some immaterial form but as matter is brought from potentiality to actuality by some composite agent.[67]

But in this regard the human soul is different from all other forms that configure matter. It is created directly by God and infused into matter.[68] This is what we might expect Aquinas to hold once we recognize that for him the soul is a configured subsistent form, as the angels are; the angels, too, are created directly by God. No immaterial subsistent forms can be generated by the sort of natural generation that material objects are capable

of, according to Aquinas; immaterial subsistent forms can come into existence only by being created directly by God.[69] On the other hand, however, Aquinas rejects vehemently the notion that the soul can be created before the body and then infused into an already existent body. He says:

> if the soul is united to the body as its form and is naturally part of human nature, then it is completely impossible [for the soul to be created before the body] ... Since the soul is a part of human nature, it does not have its natural perfection unless it is united to the body. And so it would not have been fitting to create the soul without the body.[70]

That is why, he says, the soul is created in the body, and souls are produced simultaneously with human bodies,[71] at the culmination of human generation.[72] Aquinas is willing to maintain this position even in the face of what seem to him to be religiously worrisome objections. He considers an imaginary objector asking about children produced by adultery. If the divinely created human soul comes into existence only simultaneously with the body of which it is the form, the putative objector protests, and if children are sometimes the product of adulterous liaisons, will God not be concurring in the sin of adultery insofar as he creates a human soul to infuse into the product of the adultery? Rather than step back from his view of the strong connection between the soul and the matter it configures, Aquinas concedes part of the complaint of the objector. God does concur in the action of the adulterer in such a case, Aquinas says, though only insofar as that action is natural and therefore good; God fails to concur just with what is evil in the action of adultery.[73]

So because the form that is the human soul is a configured configurer, a subsistent form able to exist apart from matter but also able to configure matter, the soul has a double aspect. On the one hand, unlike the forms of other material objects, every soul is directly created by God, as an individual thing in its own right, with its own configuration. On the other hand, like the form of any material object, it exists in the composite it configures, and it comes into existence only with that composite, not before it.

On this way of understanding the form that is the human soul, it is also easier to see why Aquinas thinks that the soul makes matter be not just human but also this human being. The soul itself is an individual configured form, and each soul is as it were handcrafted by God to inform *this* matter.[74] Aquinas says:

> everything has its being and its individuation from the same source ... Therefore, as the being of the soul is from God as from an active principle ... so also the individuation of the soul, even if it has a

> certain relationship to the body, does not perish when the body perishes.[75]

Given the double aspect of the soul, then, it is not surprising that Aquinas supposes that the individuality of a human person persists after death in the separated soul. Not only is there continuity of cognitive and conative faculties between the material object that is the human being and the separated soul, but the separated soul, as a configured form with a relation to *this* matter, is what makes a human being this particular individual.

Finally, this view of the human soul helps to alleviate some of the problems thought to be raised by the notion of the resurrection of the body. On Aquinas's view of the soul, there is, of course, mental continuity between a human person before death and after death. But the soul can also account for the sameness of the resurrected body. Since the soul was what made unformed prime matter this human being by configuring it in such a way that the matter is this living animal capable of intellective cognition, presumably in the resurrection of the body the soul can again make the unformed matter it informs this human being. Preservation of identity will not have to be guaranteed by recomposing the human being of the same bits of matter-form composites, such as atoms, as before; and puzzles about what happens when the same atoms have been part of more than one human being are avoided.

Aquinas's idea here is thus roughly analogous to one of Sydney Shoemaker's views about human persons. Shoemaker thinks that it is possible for there to be a brain-state transfer device which transfers a person's brain states from one body to another and thereby preserves an individual person in being through a succession of bodies. Shoemaker's brain states are presumably configurational states; and there is an interval, however small, in which the states are in the process of being transferred and so are no longer in the first body and not yet in the second.[76] On Aquinas's view, the interval in the transfer of the configuring soul from the old body to the new resurrected body may be very long, and in this interval the configuring soul can continue to operate, since it is itself something configured. Nonetheless, on both Aquinas's account and Shoemaker's, the imposition of the configurational state on new matter preserves the identity of the person.[77]

Cartesian dualism redivivus?

At this point it may seem that this interpretation of Aquinas's account has rescued it from some pressing problems only to enmesh it in all the equally difficult problems of Cartesian dualism, and that Aquinas has after all succumbed to the Platonic dualism from which he was so concerned to dissociate his own views. As I have explained Aquinas's account of the soul, does it not collapse into Cartesian or Platonic dualism? Is not Aquinas's view just another version of the ghost in the machine?

Here, I think, the answer is clearly 'no', and for reasons that are in a sense two sides of the same coin. On Cartesian dualism, (1) both the soul and the body are substances in their own right. Each can engage in acts independently of the other, and each can causally effect the other. Soul and body are somehow joined together in a human being; but (2) the soul is separate from the body in its functions, and that is why thinking goes on in the soul but cannot be in the body at the same time. On Aquinas's account, both (1) and (2) are false.

In the first place, although for Aquinas the separated soul exists on its own after death, it nonetheless is not a substance in its own right. Aquinas distinguishes two kinds of subsistent things that can exist on their own, those that are complete substances and those that just subsist, that is, that are able to exist on their own but are not complete substances. A severed hand[78] is a subsistent thing in this latter sense,[79] and so is the soul. Aquinas says:

> Not every particular substance is a hypostasis or a person but [only] that which has the complete nature of the species. So a hand or a foot cannot be called a hypostasis or a person, and similarly, neither can the soul, since it is [only] a part [of a complete human being].[80]

Similarly, in another place he says:

> if by 'a *this*' (*hoc aliquid*) [in the case of the soul] we understand a hypostasis or a person, or an individual located in a genus or a species, then [the human soul] cannot be said to be a *this*. But if a *this* is said to be anything capable of subsisting of itself, then in this way the soul is a *this*.[81]

And so Aquinas makes both these claims: "intellectual natures are subsistent forms, and although they exist in matter, their being does not depend on matter";[82] and "body and soul are not two actually existing substances, but instead one actually existing substance arises from these two".[83]

Therefore, although the soul is only a metaphysical part of the one substance that is a human being, it is nonetheless a subsistent thing.[84] Aquinas rejects the view that the soul is only a configurational state on the grounds that if the soul were only something such as a harmony, it could not exist on its own, and so "it would be only a form similar to other material forms".[85]

The soul, however, is not an *integral* part of a human being. If we think of integral parts as components that add to the quantity of the material whole they compose,[86] in the way that a roof is part of a house and a head is part of a body, then no forms are integral parts of the material objects to which they belong. When Aquinas lists the integral parts of a house, for example, he

tends to list such things as foundation, walls, and roof; he would not add the form of the house as one more item on the list.[87] On the other hand, when we think of the metaphysical composition of a material object such as a biologically active protein, then an important part of what we consider is the configuration in which the molecule's component atoms are organized. There can thus be metaphysical, as well as integral, parts, in some extended sense of 'part';[88] and a form is a part of a whole only as a metaphysical part.

As a metaphysical part of this sort, a form could not interact causally with the matter it informs. It makes no sense to think, for example, of the configuration of a protein interacting causally with the matter of that protein. Rather, the form has causal influence in the sense that the composite has the causal influence it does because of its form.[89] Even intellective function, then, is implemented in the body, on Aquinas's account.

So Aquinas rejects both (1) and (2), which are characteristic of Cartesian dualism, and he does so because he takes the soul to be a configured configurer. The soul is a configured subsistent thing, but it is also a configurer of matter. And because it is a configurer of matter, it is not a complete substance in its own right; it is not even an integral part of a complete substance. For that reason, an embodied human being exercises efficient causality in virtue of the soul, but the soul does not exercise efficient causality on the matter of the body it informs. As far as that goes, the prime matter it informs could not exercise efficient causality on the soul either; the matter of a human being can engage in causal interactions only in virtue of being configured as it is into a living body, a configuration it has in virtue of the soul.

We can sum up the differences between Cartesian dualism and Aquinas's account by saying that on Cartesian dualism but not on Aquinas's account, the soul is only a configured subsistent form and not also a configurer; a Cartesian soul does not configure matter to constitute a body. In consequence of this difference, Aquinas's account is not vulnerable to the two main problems thought to afflict Cartesian dualism, namely, that it cannot explain the nature of the causal interaction between soul and body and that it divides cognitive functions into those that can be implemented only in the soul and those that can be implemented only in the body. On Aquinas's account, there is no efficient causal interaction between the soul and the matter it informs, and all human cognitive functions can be implemented in the body.

Dust and spirit

Does Aquinas then succeed in reconciling the two intuitions I said earlier guided his account of the soul, namely, that human beings are composed of dust and return to it, and that at death the spirit returns to God who gave it? The answer, I think, is 'yes'.

Since Aquinas thinks of a human being as a composite of matter and soul and since he recognizes that dead human bodies decay, he does in fact believe that a human being falls apart at death. The disembodied soul which persists is not the complete human being who was the composite but only a part of that human being.[90] In response to the question whether the saints in heaven can pray for us, an objector says: "the soul of Peter is not Peter. So if the souls of the saints pray for us when they are separated from the body, we ought not to call on St. Peter to pray for us but rather on the soul of St Peter." Aquinas's reply is to grant the point that the soul is not the complete human being but to argue for the appropriateness of calling the part (the soul) by the name of the whole (the composite of matter and form that Peter was and will be).[91] Since the disembodied soul still has its intellect and will, as well as other divinely aided cognitive faculties, it is in fact appropriate to address the soul of Peter as 'Peter'.

The disembodied soul after death is consequently something like the mirror image of a human being who is in a persistent vegetative state. A human being in an irreversible vegetative state is an incomplete human being. So, in a very different sense, is a disembodied soul, on Aquinas's view. When the soul of a person is separated from the body, Aquinas thinks, the cognitive powers that person had are curtailed and restricted; and, for certain cognitive functions, Aquinas feels constrained to give complicated considerations to show how the disembodied soul could engage in them at all.[92] As for knowledge of material things in the world that would ordinarily be cognized with sense perception, Aquinas attributes the disembodied soul's ability to cognize such things to divine intervention.[93]

On Aquinas's view, then, disembodied existence is not natural to the soul. If it weren't for the miserableness of the fallen human condition, which includes the necessity of dying – that is, the separation of soul and body – the soul would never exist in a disembodied state.[94] Furthermore, the soul's existence in a disembodied state is an impermanent as well as an unnatural condition. It is contrary to the nature of the soul to be without the body, Aquinas says, and nothing contrary to nature can be perpetual. Consequently, the soul's separation from the body cannot last.[95] In the general resurrection of the dead, at the Last Judgment, souls will be reimbodied. Consequently, except for the interim period when souls are separated from matter, human persons in the afterlife will be like human persons in this life, in the sense that they will be material composites of matter and form. After the period of disembodied existence, the soul will again exist as a constituent of a body, as it did before death.[96] Nevertheless, although existence apart from the body is an unnatural and impermanent condition for the soul, on Aquinas's view it is possible for the soul to exist and function in that condition.

For these reasons Aquinas can accept the claim that at death the spirit returns to God who made it. Given the way he understands this claim,

however, it turns out after all not to be incompatible with the claim that human beings are dust.

To sum up, then, the soul is a configured subsistent form, able to exist on its own apart from matter but also able to configure matter into the living body of a human being. While it is possible for the soul to exist and (with divine help) exercise various cognitive functions apart from the body, that state is unnatural to it. In the natural condition, the soul configures matter; and when it is in its natural condition, human cognitive functions are to be attributed to the whole composite and not to the soul alone, although the whole composite exercises cognitive functions by means of the soul. If we can understand the intellective part of the human soul as roughly equivalent to the mind, then for Aquinas the mind is immaterial but implemented (in its natural condition) in matter. Mental properties are emergent, on this view, insofar as they are features which are dependent on the configuration and composition of the whole. A human being, who is a composite of matter and form, can engage in cognitive functions in virtue of his form, the soul; but in the natural condition, it is the whole composite and not the soul alone that understands and cognizes and the rest.[97]

Taxonomy: materialism without reductionism

How are we to understand Aquinas's account of the soul? It is clear that Aquinas rejects the Cartesian or Platonic sort of dualism. On the other hand, Aquinas seems clearly in the dualist camp somewhere since he thinks that there is an immaterial and subsistent constituent of the subject of cognitive function.

What sort of dualist is he? Since on his view the forms of material objects in general do not exist on their own and the soul is not a complete substance, we might think he should be classified just as some sort of property dualist. He does, however, hold that the soul can exist without the body, and his position is thus stronger than ordinary property dualisms. Maybe we should invent a new genus *subsistence dualism*, under which substance dualism will be one species and Aquinas's account of the soul another. But perhaps we need not be so fussy. It is clear that Aquinas's account of the soul is more nearly allied with substance dualism than with property dualism; and if we do not take 'substance' in 'substance dualism' too strictly (if it can include subsistent things that are not complete substances), then we can count Aquinas among the substance dualists.[98] In that case, we ought to categorize Aquinas as a non-Cartesian substance dualist and put him in the camp of those opposed to physicalism.

Matters are somewhat complicated here, however. Daniel Dennett takes it to be characteristic of dualism to hold that the mind is not composed of matter and that scientific investigation of the brain cannot teach us anything about the mind.[99] Shoemaker thinks that what characterizes dualism is the

view that a person is something distinct from his body and so has any physical states only derivatively.[100] But if Dennett and Shoemaker are right about what dualism is, then Aquinas should not be counted among the dualists. Aquinas takes human beings to be matter-form composites, and he attributes cognition to the whole human being. Since he takes the subject that engages in cognition to be a material substance, it will be possible to investigate that subject by the methods for investigating matter. Furthermore, Patricia Churchland supposes it to be one of the main characteristics of physicalism to hold that "mental states are implemented in neural stuff".[101] But if this characterization of physicalism[102] is right, Aquinas should apparently be grouped with the physicalists. Although Aquinas mistakenly supposes that the intellect is tied to no particular bodily organ, he nonetheless holds that the intellectual soul is the form constituting the human body as a whole. On his view, therefore, mental states will be implemented in the matter of the body. His account of the soul is consequently compatible with supposing that mental states are implemented in neural stuff.

At this point it might occur to someone to suppose that it can hardly be surprising that Aquinas's account of the soul is not readily assimilable to either dualism or physicalism; the difficulty in categorizing Aquinas, such a person might think, stems from trying to insert a peculiarly medieval theory into the contemporary discussion, where it simply will not fit. But I think this is a mistaken attitude.

Consider, for example, Richard Boyd's defense of a functionalist version of materialism. Boyd argues that, although materialism is sometimes taken to include the claim that mental states are identical to physical states, materialism is in fact committed just to the claim that the mind is composed of matter. Boyd says: "Materialism, properly understood, does not entail the sort of mind-body identity statements against which the essentialist [i.e., anti-materialist] criticisms are directed."[103]

To argue for his claim, Boyd distinguishes compositional plasticity from configurational plasticity, in this way:

> Compositional plasticity is displayed by a type of state, event, or process to the extent that there are possible realizations of that state, event, or process that differ in the sorts of substances or causal factors that constitute them. Configurational plasticity, in contrast, is displayed by a type of state, event, or process to the extent that its possible token realizations differ in the structural configuration or arrangement of their constituent parts, events, substances, or causal factors.[104]

According to Boyd: "mental events, states, and processes are like computational states in being entirely configurational, that is, in possessing maximal compositional plasticity."[105]

In fact, on his account, mental events, states, and processes have no compositional properties essentially. The occurrence of some mental or psychological states in more than one animal species shows that mental states should not be identified with physical states, since it is highly unlikely that other animals share exactly our neurophysiological states; and it is even more unlikely that all logically possible animals that have some of the same mental states as human beings would have the same physiological states we do. For that reason as well as others, Boyd says, "materialism (in its most plausible version) entails that mental states are purely configurational"[106] and are not identical with physical states.[107]

Furthermore, on Boyd's view it is possible for mental events, states, and processes to exist without being realized in any matter at all.[108] He says, "any particular actual world mental event, state, or process could be – in some other possible world – nonphysically realized."[109]

Consequently, Boyd says: "A materialist account of mental phenomena is quite compatible with the view that there are possible worlds in which mental phenomena exist but are nonphysical."[110]

In fact, he maintains:

> it is ... fully compatible with a plausible materialist psychology that there should be a possible world in which there is no matter at all, but in which there are events, states, and processes that have all the nonrelational properties essential to the mental events, states, and processes manifested in the actual world.[111]

Mental processes and states must be the processes and states of something, however, and so on Boyd's view it must also be logically possible that there be a mind which is not realized in matter.[112]

Boyd thinks of himself as supporting materialism, and he takes his position to be a version of materialism without reductionism. It seems to me, however, that his position has some similarities to (though, of course, it is not identical with) that of Aquinas, who is not only a dualist but even a substance dualist (in a liberal sense of that phrase). Boyd's mental phenomena, like Aquinas's soul, are configurational;[113] like the soul in Aquinas's account, mental phenomena on Boyd's view have no essential compositional properties. Furthermore, both Boyd and Aquinas agree in supposing that it is possible for what is purely configurational to exist on its own apart from any material composition and to function in that condition. For both of them, then, it is possible that there be functioning, disembodied mental states.

It is tempting here to suppose that this comparison undercuts the materialism of Boyd's account[114] or to worry that it implies some sort of non-reductionistic materialism in Aquinas's.[115] For Aquinas, material objects are composites of matter and form, and a composite of matter and

form can itself serve as matter for some other, more complex composite of matter and form. As complexity increases and new forms are produced in the increasingly complex composites, new substances as well as new properties will emerge. To reduce the composite to its constituent matter or to reduce the properties of the composite to just the properties of the composite's material components is to think that the form of the whole is nothing. But on Aquinas's view, the form of the whole, the configuration that makes the matter into the whole it composes, is an important ontological feature of things. And that is why, on his account, a material object cannot be reduced to its constituent matter.

But, in my view, the real lesson of the comparison and of this detailed examination of Aquinas's account of the soul is to show how misleading the dichotomy between materialism and dualism is. What Aquinas's account of the soul shows us is that a certain kind of (restricted rather than global) materialism – one that takes mental states to be implemented in bodily states – is compatible with a certain sort of dualism – one that is non-Cartesian in character. To this extent, examination of Aquinas's account supports Searle's claim that it is a mistake to suppose that one must choose between materialism and dualism.[116]

Although Boyd accepts the dichotomy between materialism and dualism and means to choose materialism, something he says in support of his position helps explain why the dichotomy is misleading or mistaken. He says:

> The issue [between materialism and dualism] ... has come to be described as the issue of whether the corresponding mental and physical states are identical [as many materialists have argued] or (as the dualist suggests) merely correlated ... This way of putting the question is fundamentally misleading. The issue is not identity versus correlation, but composition versus correlation.[117]

Boyd supposes that correlation is unsuccessful as an account of mind, and he (like Aquinas) builds his position around composition. As both Boyd and Aquinas recognize (in different ways), however, composition has a two-fold nature. On Aquinas's view, composition for material objects requires both matter and form; on Boyd's view, we can distinguish the configuration of a composite from the stuff in which that configuration is realized. If we focus on the material stuff and think that composites are identical with the matter that constitutes them, then we are likely to think the mental is identical with the physical. If we focus on configuration as the essential feature of the mental, our view will look dualistic. But in fact because a human mind is a complex configuration of a material object, a correct account of it will share features of both materialism and dualism. Furthermore, the hybrid nature of composition also helps to explain the strength of the debate over the nature of the mind. Because a human mind is implemented in a composite and

composition is a hybrid of matter and configuration, both materialist and anti-materialist intuitions can find strong support from a consideration of the characteristics of the mind.

Aquinas's account, then, helps us see that the battle lines between dualism and materialism are misdrawn.[118] It is possible to have a coherent account of the mind that satisfies intuitions of both dualists and materialists. It is unlikely, of course, that everyone will think Aquinas's account of the soul, including the soul's persistence after death, is coherent. But it is worth noting here that religious belief is not necessary for supposing that the soul can exist and function apart from the body. Boyd, too, thinks it is clear that there can be mental states, events, and processes even in a world in which there is no matter at all.[119] Furthermore, even if we cut out all of Aquinas's account that has to do with the afterlife, that is, if we assume that the soul in his account is just one more immaterial form of a material object, like the form of a protein, which exists only in the composite it helps constitute, Aquinas's account of the mind would nonetheless have the hybrid nature highlighted here. It would still take the mind to be something essentially immaterial or configurational but nonetheless – in human beings – realized in material components. And so it would still combine features of both dualism and materialism.

Aquinas's account of the soul, therefore, suggests that to make progress on a philosophical understanding of the nature of the mind (as distinct from a biological understanding of the mechanisms by which the mind operates), it would be good to break down the dichotomy between materialism and dualism that takes them to be incompatible positions. It also strongly suggests that Cartesian dualism is not essential to all the major traditions of the major monotheisms. For Aquinas, at any rate, the rejection of Cartesian dualism is entirely compatible with his view of the nature of the soul.

7

THE FOUNDATIONS OF KNOWLEDGE

Introduction

Aquinas is sometimes taken to hold a foundationalist theory of knowledge. So, for example, Nicholas Wolterstorff says:

> Foundationalism has been the reigning theory of theories in the West since the high Middle Ages. It can be traced back as far as Aristotle, and since the Middle Ages vast amounts of philosophical thought have been devoted to elaborating and defending it ... Aquinas offers one classic version of foundationalism.[1]

And Alvin Plantinga says:

> [W]e can get a better understanding of Aquinas ... if we see [him] as accepting some version of classical foundationalism. This is a picture or total way of looking at faith, knowledge, justified belief, rationality, and allied topics. This picture has been enormously popular in Western thought; and despite a substantial opposing groundswell, I think it remains the dominant way of thinking about these topics.[2]

Foundationalism is most frequently associated with Descartes, and the sort of foundationalism ascribed to Aquinas is sometimes distinguished from that attributed to Descartes. Plantinga, for example, distinguishes what he calls 'ancient and medieval foundationalism' from the modern foundationalism commonly supposed to be in Descartes, Locke, and Leibniz, among others; but Plantinga thinks Aquinas's brand of foundationalism has enough in common with the foundationalism of Descartes and other early modern philosophers that they can all be conflated under the heading 'classical foundationalism'.

But what exactly is being attributed to Aquinas here? Here is Plantinga's description of classical foundationalism:

> Foundationalism is best construed ... as a thesis about rational noetic structures ... According to the foundationalist a rational noetic structure will have a foundation – a set of beliefs not accepted on the basis of others; in a rational noetic structure some beliefs will be basic. Non-basic beliefs, of course, will be accepted on the basis of other beliefs, which may be accepted on the basis of still other beliefs, and so on until the foundations are reached. In a rational noetic structure, therefore, every non-basic belief is ultimately accepted on the basis of basic beliefs.[3]
>
> A further and fundamental feature of classic varieties of foundationalism [is that] they all lay down certain conditions of proper basicality ... [A] belief to be properly basic (that is, basic in a rational noetic structure) must meet certain conditions ... Thomas Aquinas ... holds that a proposition is properly basic for a person only if it is self-evident to him or "evident to the senses" ... [T]he outstanding characteristic of a self-evident proposition is that one simply sees it to be true upon grasping or understanding it ... Aquinas and Locke ... held that a person, or at any rate a normal, well-formed human being, finds it impossible to withhold assent when considering a self-evident proposition ... [P]ropositions "evident to the senses" are also properly basic. By this latter term ... [Aquinas] means to refer to perceptual propositions – propositions whose truth or falsehood we can determine by looking or employing some other sense.[4]

This particular sort of foundationalism is currently thought to be in trouble; various philosophers, including Plantinga himself, have raised serious objections to it.

In the first place, this brand of foundationalism gives the counter-intuitive result that much of what we think we know is not to be counted as knowledge. The propositions which on classical foundationalism we can take to be properly basic do not entail (or even render probable) many of the apparently non-basic propositions we ordinarily suppose we know. Plantinga's examples include "all those propositions that entail ... that there are persons distinct from myself, or that the world has existed for more than five minutes".

In the second place, there are reasons for doubting whether classical foundationalism is right in confining the set of properly basic beliefs to those which are self-evident and evident to the senses. For example, memory beliefs, Plantinga argues, are neither self-evident nor evident to the senses, but they certainly seem to be properly basic. The belief that I walked to school this morning, rather than driving or cycling, is a belief I hold without basing it on other beliefs; and since it seems perfectly rational for me to take this belief as basic, this memory belief and others like it also seem to be properly basic beliefs.

Finally, Plantinga has argued that the central claims of this sort of foundationalism cannot themselves meet foundationalist criteria, because these central claims cannot be held as properly basic beliefs – they are not self-evident or evident to the senses – and it is difficult to see how they could be traced back to properly basic beliefs.

Plantinga's own favored theory of knowledge has certain features in common with reliabilism.[5] On Plantinga's account, when a person has enough warrant for a true belief, the belief counts as knowledge; and his complicated explanation of warrant includes this central claim: in order to have warrant, a person's belief must be true and acquired by a reliable process, when that person's cognitive faculties are functioning as they were designed to function in an environment in which they were designed to function. Given this understanding of the notion of warrant, on Plantinga's account beliefs with sufficient warrant constitute knowledge. This account is avowedly externalistic. One cannot tell just by looking within oneself and reflecting on the results of the introspection whether one's faculties are functioning as they were designed to function or whether the environment in which they are functioning is the appropriate one.

Plantinga concludes his case against the theory of knowledge he ascribes to Aquinas and others in the history of philosophy with the announcement that "classical foundationalism is bankrupt",[6] and he is not the only philosopher to make such a claim. In a recent book designed to acquaint students with current thinking about theories of knowledge, for example, Keith Lehrer ends his examination of foundationalism by claiming that as a theory of knowledge it "is a failure".[7]

So if the theory of knowledge held by Aquinas is classical foundationalism of this kind, then there are some good arguments for rejecting his views.

Of course, neither Wolterstorff nor Plantinga is a historian of medieval philosophy, and I began with their views for just that reason: to show that contemporary philosophers engaged in epistemology accept as commonplace this view of Aquinas's theory of knowledge. One historian of philosophy, however, who has expressly addressed the issue of foundationalism in the history of Western philosophy is T. H. Irwin. In his book *Aristotle's First Principles*,[8] Irwin argues that at least in the *Posterior Analytics*, Aristotle himself is a foundationalist. Irwin says:

> Aristotle therefore recognizes first principles with no further justification; but he denies that his view makes knowledge impossible, because he denies that demonstration requires demonstrable first principles. In denying this, he implies that in some cases complete justification is non-inferential, since it does not require derivation from other propositions. Non-inferentially justified first principles allow us to claim knowledge without facing an infinite regress or a

> circle. Aristotle's conclusion implies a foundationalist doctrine, requiring true and non-inferentially justified beliefs as the basis of knowledge and justification.[9]

And Irwin takes the *Posterior Analytics* as an epistemological treatise in which Aristotle develops his foundationalism: "Aristotle's account of scientific knowledge develops from his metaphysical realism and his epistemological foundationalism";[10] and "[in the *Analytics* Aristotle] treated foundationalism as the only alternative to skepticism".[11]

Irwin himself takes a rather negative attitude towards this side of Aristotle's philosophy. According to Irwin:

> we must say that Aristotle's foundationalism in the *Analytics* results from a one-sided view of science and objectivity, and that this view needs considerable modification in the light of Aristotle's views on first philosophy.[12]

Irwin's views, of course, are not the only available interpretation of the *Posterior Analytics*.[13] Nonetheless, if his account of Aristotle is correct, it provides some confirmation for the common view of Aquinas as a foundationalist, since it would not be unreasonable to suppose that Aquinas simply accepted and developed the foundationalist theory of knowledge he found in Aristotle.

In this chapter I want to re-examine this picture of Aquinas's epistemology as an example of classical foundationalism.

Foundationalism

It will be helpful in this enterprise to have a little more clarity about the nature of the theory of knowledge that Aquinas is being taken to hold. On Plantinga's description of the type of foundationalist theory of knowledge he attributes to Aquinas, it includes the following claims:

(1) Some propositions are properly basic in the sense that it is rational to accept them without basing them on other propositions.
(2) Properly basic propositions include only propositions which are self-evident or evident to the senses, that is, propositions which can be known to be true either just by understanding their terms or by employing one or more of the senses.
(3) All non-basic propositions must be accepted, directly or indirectly, on the basis of properly basic propositions.

It is common to add one more set of conditions to this list. Wolterstorff stipulates that for classical foundationalists:

(4) the properly basic propositions are known with certitude;

and that consequently

(5) the propositions known on the basis of properly basic propositions can also be known with certitude.[14]

Lehrer emphasizes the search for a guarantee of truth, or for certainty, as the hallmark of foundationalism. He says:

> [A] central thesis of the traditional foundation theory was that basic beliefs are immune from error and refutation;[15]

> [S]ome beliefs *guarantee* their own truth. If my accepting something guarantees the truth of what I accept, then I am completely justified in accepting it for the purpose of obtaining truth and avoiding error. We are guaranteed success in our quest for truth and cannot fail.[16]

Finally, although it need not be so understood, classical foundationalism has been taken as a species of internalism, the view that only what is readily cognitively accessible to a person (for example, by reflection) is relevant to the justification of his beliefs. And although it is possible to combine features of both foundationalism and reliabilism, foundationalism has been distinguished from reliabilism, put forward as the view that knowledge stems from reliable states or processes not internally accessible to the knower.

Although both Plantinga and Wolterstorff freely speak of Aquinas as a foundationalist, or classical foundationalist, I want to avoid the sort of controversy which is sometimes raised by taxonomy. So I want to prescind from the precise terminology used by Plantinga, Wolterstorff, and other contemporary epistemologists who have made claims about Aquinas's theory of knowledge and focus just on internalism and the claims in (1)–(5) above. The idea of a theory of knowledge characterized by (1)–(5) is that there is a small set of propositions which we can know with certainty to be true without inferring them from anything else that we know, and that our non-basic beliefs will also be known with certainty if we base them on that small set of certainly true propositions. In Aquinas's case, the set of propositions which properly serves as the foundation for the non-basic beliefs is supposed to include just two groups of propositions: those whose truth is seen as soon as they are understood, and those whose truth is evident to the senses. As we examine Aquinas's views, I will be concerned to ask only whether he holds an epistemological theory which is internalist and which can be characterized by (1)–(5).

It will, of course, be helpful to have a noun by which to refer to this position rather than referring to it always by some clumsy circumlocution. So for ease of exposition I will refer to this theory as 'Foundationalism', capitalizing the term to remind the reader that it does not refer to foundationalism as a whole or to some commonly discussed species of foundationalism, but picks out instead only an epistemological position which is internalist and which is characterized by (1)–(5).

Evidence for Foundationalism in Aquinas

Why would anyone suppose Aquinas is a Foundationalist? One of the main reasons is that the Latin term for the subject of Aquinas's commentary on Aristotle's *Posterior Analytics* – namely, '*scientia*' – has often enough been translated as 'knowledge' and his commentary on that work of Aristotle's has consequently been taken to consist in an exposition of his theory of knowledge. Understood in this way, Aquinas's commentary can indeed give an appearance of Foundationalism.

There is a process of reasoning, Aquinas says, which yields its results necessarily, and in this process the certitude of *scientia* is acquired. (I will leave '*scientia*' untranslated, so as not to make any assumptions at the outset about the appropriate English equivalent for it; and I will render '*scire*' as 'have *scientia* of', or some other suitable circumlocution with '*scire*' in parenthesis after it, in order to signal to the reader that *scientia* is at issue.) Aquinas says, "*scientia* is cognition acquired through demonstration".[17]

The process of reasoning at issue here consists in demonstrative syllogisms.[18] Each demonstrative syllogism has two premises; and, according to Aquinas, these premises must be better known and prior to the conclusion.[19]

But demonstration does not give rise to an infinite regress. There are first principles of demonstration, and these are themselves indemonstrable.[20] Aquinas says: "It is not possible to acquire *scientia* of (*scire*) anything by demonstration unless there is prior cognition of the first, immediate principles."[21]

And so, according to Aquinas:

> *scientia* ... which is acquired by demonstration, proceeds from propositions which are true, first, and immediate, that is, which are not demonstrated by any intermediate but are evident by means of themselves (*per seipsas*). They are called "immediate" because they lack an intermediate demonstrating them, and "first" in relation to other propositions which are proved by means of them.[22]

There is no cognition that has more certitude than the cognition of such first principles, according to Aquinas, and first principles are the cause of

certitude in one's cognition of other propositions.[23] They are not only necessary but known *per se*,[24] and any *scientia* takes its certitude from them.[25] On his views, there are different sorts of *scientia*, but mathematics is one of the paradigms.[26]

Clearly, all these claims give the appearance that Aquinas is committed to Foundationalism.

That appearance is only enhanced by what Aquinas has to say about the sorts of propositions which are first principles. On the one hand, Aquinas says that the first of all the principles are the law of non-contradiction and the law of excluded middle. But definitions, too, are principles of demonstration.[27] In fact, every proposition in which the predicate is in the definition of the subject is known *per se*.[28] On the other hand, Aquinas also says that propositions accepted by the senses, such as that the sun is now eclipsed, are the most known (*notissima*).[29]

Furthermore, on Aquinas's views, it seems that propositions which we know in virtue of understanding their terms – that is, self-evident propositions – and propositions evident to the senses are properly accepted as basic. All other propositions which form part of our knowledge must be accepted on the basis of these properly basic propositions. So we begin with properly basic propositions and proceed by means of demonstrative syllogisms to non-basic propositions. In this way, we begin with what can be known with certainty – the first, immediate, indemonstrable principles of demonstration – and move to non-basic propositions, which are deduced from the properly basic ones and so also count as knowledge known with certainty. Furthermore, introspective reflection seems to be enough to tell a person whether he has begun with the appropriate base and whether the rest of what he takes himself to know is derived in the appropriate way from that base.

These considerations can certainly make it seem as if Aquinas is committed to Foundationalism.

The problem

But just a little further exploration of Aquinas's views shows that this picture of Aquinas's theory of knowledge is irremediably flawed.

In the first place, there is ample evidence that Aquinas's notion of *scientia* is not equivalent to our notion of knowledge.

For Aquinas, *scientia* is not of contingent or corruptible things.[30] In fact, there is no *scientia* of individual things; demonstration always has to do with universals. Aquinas says, "Demonstration must always be on the basis of universals";[31] and "universals are the objects of our inquiry, just as they are the things of which we have *scientia*".[32]

Elsewhere, he says,

> 'Universal' is taken here as a certain suitability or adequation of a predicate to a subject, as when the predicate is not found apart from the subject or the subject without the predicate ... Demonstration is properly speaking of a universal of this sort.[33]

And, in another place he maintains:

> [Aristotle] asserts that two things pertain to *scientia*. One of them is that it is universal, for there is no *scientia* of individual things susceptible to sense ... Besides things which are true and necessary and which cannot be otherwise, there are things which are true but not necessary, which can be otherwise; but it is evident ... that there is no *scientia* of such things.[34]

If '*scientia*' were Aquinas's term for knowledge, then we would have to attribute to him the view that we can have no knowledge of contingent, corruptible, or singular things; and that would be a very odd view of knowledge. It is also contrary to his explicitly argued claim that the human intellect can cognize (*cognoscere*) individual things and contingent things (although the intellect does so indirectly by working together with the senses).[35] Furthermore, it is at odds with Aquinas's claim that there is an act of intellect by which a human intellect cognizes itself.[36] Finally, it is hard to square with Aquinas's own claim, presented above, that propositions accepted on the basis of the senses, such as that the sun is now eclipsed, are most known (*notissima*).[37]

But there is further evidence which suggests not only that *scientia* is not Aquinas's equivalent of 'knowledge' but in fact that *scientia* should be understood as a special species of the broader genus *cognitio*, which looks like a much better candidate for an equivalent in Aquinas's thought to our notion of knowledge than *scientia* is.[38] (Actually, if Aquinas has a word which expresses what the English term 'knowledge' does, it is perhaps '*notitia*', although that Latin term does not have quite the range the English term does, and where we would expect to use the verb 'know', Aquinas uses not the verb cognate with '*notitia*' but rather '*cognosco*', 'cognize'.) When Aquinas explains '*scire*', the verb cognate with '*scientia*', he describes it in this way: "To have *scientia* (*scire*) of something is to cognize it perfectly (*perfecte*)."[39] In fact, Aquinas defines '*scire*' as Aristotle does: "To have *scientia* [of a thing] (*scire*) is to cognize the cause of the thing";[40] and he also says that "a cause is the intermediate in a demonstration which brings it about that we have *scientia* (*facit scire*)".[41]

In medieval logic, if we start with the highest genus in one of Aristotle's ten categories and progressively divide it into its subaltern genera and species by means of pairs of differentiae, we get a device known as a Porphyrian tree, which illustrates a set of structured relationships.[42] For

example, the Porphyrian tree of substance begins with *substance*, which is divided into *corporeal substance* and *incorporeal substance* by the differentiae *corporeal* and *incorporeal*. Each of these subaltern genera of substance is divided in its turn until the single highest genus *substance* has been divided into all its subaltern genera and species. Medieval philosophers were fond of this device and extended its use as a means of showing structured relationships in many other areas besides the Aristotelian categories. Aquinas's explanations of *scientia* and *scire* given above, together with other things he says elsewhere, suggest that Aquinas has in mind a Porphyrian tree of cognition, with *scientia* as well as other species of cognition constituting the branches of the tree.[43]

So, for example, Aquinas says that *scientia* is one of several habits (*habitus*) of cognition which are related to what is true. There are five such habits, on his view, and all of them are species of cognition. Following Aristotle, Aquinas lists the five as art, wisdom, prudence, understanding, and *scientia*.[44] In another place, he says that a person is said to have understanding or *scientia* insofar as his intellect is perfect in cognizing truth.[45] Prudence and art have to do with the practical part of the soul, which reasons about things that can be done by us; prudence is right reason about things to be done, and art is right reason about things to be made. But wisdom, understanding, and *scientia* have to do with the speculative part of the soul. Understanding is a habit regarding first principles of demonstration. Wisdom has to do with causes which are ultimately first (that is, the highest or divine causes of things), and *scientia* has to do with lower causes.[46]

So here it looks as if the top of the Porphyrian tree in question is *cognitive habits with regard to what is true*, with a first division dividing these cognitive habits into those of the speculative intellect and those of the practical intellect.[47] Those of the practical intellect – prudence and art – are divided from one another insofar as one is a cognitive habit of the practical intellect regarding the truth with respect to things to be done and the other with regard to things to be made. Understanding is a cognitive habit of the speculative intellect regarding the truth with respect to first principles, unlike *scientia* and wisdom which have to do with the causes of things. And *scientia* is distinguished from wisdom because wisdom is a cognitive habit of the speculative intellect regarding truth with respect to the very highest causes of things,[48] and *scientia* is such a habit but with respect to causes other than those that are highest.

Furthermore, Aquinas tends to divide *scientia* itself into kinds, dependent on its subject matter, in much the same way as we distinguish sciences (or sciences and humanistic disciplines) from one another. So, for example, at the start of *ST* he considers carefully the question whether theology is a *scientia*.

So for all these reasons it seems clearly a mistake to render '*scientia*' simply as 'knowledge' and therefore even more of a mistake to interpret Aquinas's

theory of *scientia* as a theory of knowledge. What he has to say about *scientia* cannot consequently be taken to express his views about the nature or structure of knowledge.

Evidence against ascribing Foundationalism to Aquinas

But what about the appearance of Foundationalism presented just above? What about Aquinas's apparent adherence to the view that there are properly basic beliefs, which ground all other propositions believed and which are known with certainty?

Properly basic beliefs for Aquinas are supposed to consist in propositions evident to the senses and self-evident propositions or propositions known with certainty to be true as soon as their terms are understood. It will be helpful to consider these two groups in turn.

It is true that Aquinas thinks the senses cannot be deceived as regards their proper objects;[49] but the proper objects of the senses are something below the propositional level.[50] Any belief about the world of physical objects based on the senses, such as the belief that there is a coffee cup in front of me or that there is a tree outside the window, is for Aquinas a deliverance of the intellect as well as the senses and constitutes a belief with regard to which we may be mistaken. Aquinas quotes with approval Augustine's dictum that we can make mistakes with respect to any of our senses, and he gives an affirmative answer to the question whether there can be falsity in sensory cognition. For example, he says:

> We are not deceived in the judgment by which we judge that we sense some thing. But from the fact that a sense is sometimes affected otherwise than as things are, it follows that that sense sometimes reports things to us otherwise than they are. And therefore by means of sense we make a mistake with regard to things, though not with regard to sensing itself.[51]

These claims on Aquinas's part, of course, do not show that it is wrong to attribute to him the view that propositions evident to the senses are properly basic beliefs. He surely does think that propositions evident to the senses are accepted without being based on other beliefs, and he also clearly thinks that, most of the time at any rate, we are rational in accepting such beliefs as basic. What Aquinas's claims about the fallibility of the senses do show, however, is that propositions based on sensory cognition may be false and that therefore they don't constitute a privileged class of propositions known with certainty. Consequently, a noetic structure in which the non-basic beliefs of a person are based on propositions based on sensory cognition may or may not constitute a set of beliefs known with certainty. On Aquinas's view, therefore, if the foundation includes propositions evident to the senses,

there is no guarantee that the resulting structure comprises knowledge; it might consist in error instead.

Should we then understand Aquinas as a Foundationalist who restricts the certain foundations of knowledge to self-evident propositions? The evidence here too is against Foundationalist interpretations of Aquinas.

The candidates for self-evident propositions in Aquinas are the first principles of a *scientia*. Now these principles come in two sorts; what Aquinas (following Aristotle) calls 'the common principles', such as the law of non-contradiction, and what he labels 'the proper principles', such as *every man is an animal*.[52]

Common principles, unlike proper principles, are common to every *scientia*. They are not only true, indemonstrable, and known *per se*; but, in fact, Aquinas says, a common principle cannot be confirmed by an argument. It is known by the light of natural reason, and no one can form an opinion which is the contrary of a common principle.

Common principles, then, clearly look like candidates for the properly basic foundation of certain knowledge. It is, of course, obvious that common principles are basic; not only are they not derived from other propositions, but they cannot be, on Aquinas's view. And, equally clearly, there is no possibility here of falsity, as there was in the case of propositions based on sensory cognition; common principles are not only true but known by the light of natural reason itself. So common principles seem manifestly properly basic.

There are problems here, too, however. They arise from our cognition of common principles. On Aquinas's views, to say that common principles are known *per se* is not the same as saying that they are known *per se by us*.[53] We can think something is not a common principle when in fact it is. We can deny common principles out of bad intellectual habits or obstinacy, for example.[54] That is, on Aquinas's views, we cannot really deny common principles, in the sense that what we in fact believe really is the opposite of a common principle; but, Aquinas says, we can deny common principles orally (*'ore'*)[55] and verbally (*'secundum vocem'*), in accordance with a false opinion or imagination.[56] As Aquinas puts it: "Nothing is so true that it cannot be denied verbally. For some people have denied orally even this most known principle: 'The same thing cannot both be and not be.'"[57]

For Aquinas, a common principle is known *per se* in the sense that if a person truly understands the terms of the principle, he will see that it must be true; but he might not truly understand the terms of the principle even though he can use those terms adequately in ordinary discourse. To take a particularly striking example, on Aquinas's view, the proposition that God exists is known *per se*. That is, if a person really understands the term 'God', he will also understand that God is simple and that therefore God's essence includes his existence, so that God not only exists but exists

necessarily. But, of course, the proposition that God exists is not known *per se* by us.[58] On Aquinas's own views, it is perfectly possible for a person to be able to use the term 'God' adequately in ordinary discourse and not understand the term in such a way as to see that the proposition 'God exists' is necessarily true.

In the case in which a person denies a common principle, Aquinas will want to say both that the person who denies it does not really understand the principle and that in any case what that person takes to be the case does not constitute the opposite of the principle he is denying. But the interesting point for our purposes is that even though common principles are known by the light of natural reason, it is perfectly possible that what is in fact a common principle be rejected by someone as false (or at any rate possible that he should reject the common principle as he understands it). It is therefore also possible for a person to take what is in fact false as true and use it as a common principle. In such a case, he will be acting on a false imagination, or his verbal utterances will not correspond to any coherent concept; but he will be mistaken nonetheless.

Consequently, there is no guarantee that when a person begins with propositions which function as common principles for him, the resulting noetic structure will comprise knowledge. Just as in the case of propositions evident to the senses, the result might be error instead. Of course, whatever is suitably based on propositions that really are common principles will unquestionably be true and known. But the problem is that a cognizer might be confused, and in the place of genuine common principles he might have false propositions instead. If he is confused in this way, he is not really understanding the common principles at issue. The salient point, however, is that for all he knows he might be in the state of not really understanding the relevant common principles. Therefore, if he begins with propositions which function for him as common principles, the cognizer has no guarantee that what he builds on that foundation will even be true, let alone constitute something known with certainty.

What about proper principles, then? It seems even less likely that Aquinas's proper principles can serve as the foundations of knowledge on a Foundationalist theory of knowledge. To see why, we have to understand better what Aquinas means by the notion of a proper principle.

According to Aquinas, no *scientia* can reach its conclusions on the basis of common principles alone; proper principles are always required also.[59] Furthermore, there are very many proper principles. In fact, Aquinas says, following Aristotle, the number of principles is not much less than the number of conclusions.[60] These principles are universal propositions, and they describe a cause (or sometimes an effect) of something[61] (that is, a material, formal, efficient, or final cause or effect).[62]

Finally, the proper principles are always established by means of induction. According to Aquinas:

> Demonstration proceeds from universals, but induction proceeds from particulars. Therefore, if universals, from which demonstration proceeds, could be cognized apart from induction, it would follow that a person could acquire *scientia* of things of which he did not have any sensory cognition (*sensus*). But it is impossible that universals be comprehended without induction.[63]

And so he says, "Universals, from which demonstration proceeds, do not become known (*nota*) to us except by induction;"[64] and, "it is necessary to cognize the first, universal principles by means of induction".[65]

For this reason, because first principles are acquired in this way, Aquinas says that, in a way, there are two roads to *scientia*; one is demonstration and the other is induction.[66] And elsewhere he says: "It is natural to human beings that they acquire *scientia* by means of the senses."[67]

Proper first principles, then, which are necessary to any *scientia*, are not basic at all, let alone properly basic. On the contrary, they are derived from other propositions by a process of reasoning, and the reasoning in question is induction. They are first in the process of demonstration, and so they are indemonstrable; but, as is evident here, that a principle is indemonstrable does not mean that it cannot be argued for or reasoned to in any way.

But, of course, induction is a notoriously uncertain mode of inference, as Aquinas himself recognizes: "a person who makes an induction by means of singulars to a universal does not demonstrate or syllogize with necessity."[68]

And Aquinas draws an analogy between induction and the method of analysis he calls 'division':

> the method of division is analogous to the method of induction ... When something is proved syllogistically ... it is necessary that the conclusion be true if the premises are true. But this is not the case in the method of division.[69]

So not only is there no guarantee that what a cognizer uses as a proper first principle of *scientia* will be something known with certainty, there is not even a guarantee that what the cognizer starts with as a first principle will be true, since it is the result of induction.

Of course, since a genuine first principle is defined as true, if a cognizer begins with first principles, he will begin with something true. But since what we use as a first principle has to be the result of induction, what we use as first principles might very well not be genuine first principles at all, and there is no simple formal procedure for telling the genuine from the counterfeit.

Even when a cognizer does begin with a genuine first principle, however, he will not be starting with a properly basic proposition, since the genuine first principle he begins with will be derived by induction.

For these reasons, proper principles are no more candidates for properly basic beliefs in a Foundationalist theory of knowledge than common principles or propositions based on sensory cognition.

Finally, a word should be said about Aquinas's term '*certitudo*', which is generally translated just as 'certainty'. Aquinas is perfectly willing to talk about the possibility of error arising in demonstration. For example, following Aristotle, he says, "in order not to fall into mistakes in demonstration, one must be aware of the fact that often a universal seems to be demonstrated but in fact is not".[70]

Nonetheless, according to Aquinas, the process of demonstration produces "the *certitudo* of *scientia*".[71] And so what Aquinas says about the *certitudo* of *scientia* can give the appearance of supporting a Foundationalist interpretation of his epistemology.

But this appearance should not be taken at face value. Very little of Aquinas's commentary on the *Posterior Analytics* is devoted to an explanation of *certitudo*, but in the small space he gives to an exposition of the notion, he says things of this sort about it:

> *Scientia* is also certain cognition of a thing, but a person cannot cognize with *certitudo* anything which can be otherwise. And so it must also be the case that what we have *scientia* of cannot be otherwise than it is.[72]

Furthermore, Aquinas compares one *scientia* to another in order to determine which has more *certitudo* (or is *certior*) than the other. A *scientia* which knows *that* something is the case but does not know *why* it is the case has less *certitudo* than a *scientia* that knows both things.[73] Also, a *scientia* which is not about a subject that includes matter has more *certitudo* than a *scientia* that is about something material. For this reason, arithmetic has more *certitudo* than music.[74] In addition, on Aquinas's view, geometry has less *certitudo* than arithmetic;[75] a cause is *certior* than its effect; and a form is *certior* than matter.[76]

What exactly Aquinas has in mind with '*certitudo*' or '*certior*' is not clear. But clearly it would be a mistake to translate '*certitudo*' in such contexts as 'certainty'. Certainty, as we understand it, is a kind of relation between a knower and what is known, but it is difficult to see why anyone would suppose that such a relation could not obtain between a knower and a contingent state of affairs. And in the comparison of one *scientia* to another, of a cause to its effect, or of a form to matter, questions of the relation between knower and what is known do not seem to come into the discussion at all. For these reasons, we should be cautious about how we render Aquinas's term '*certitudo*'. It is not obvious what the concept of *certitudo* is in Aquinas's thought, but it is undoubtedly a mistake to take it simply as equivalent to our notion of certainty.

To summarize, then, on the view which interprets Aquinas as a Foundationalist, the foundation for knowledge on his theory of knowledge is constituted by propositions evident to the senses and the first principles of *scientia* known *per se*. These will be the properly basic propositions which are known with certainty and from which all other non-basic propositions known with certainty are derived. But, in fact, the evidence that Aquinas is a Foundationalist depends on interpreting '*scientia*' as equivalent to 'knowledge', and we have seen good reasons for supposing that such an interpretation is decidedly mistaken. Furthermore, as I have shown, on Aquinas's views, in one way or another, a person can be in error as regards all the propositions which are supposed to ground knowledge for him on the interpretation that Aquinas is a Foundationalist. The propositions which are supposed to be known with certainty according to that interpretation are not in fact guaranteed to be true on Aquinas's account and therefore obviously are not guaranteed to be known with certainty or to provide a certain foundation for other, non-basic propositions derived from them. Finally, as I have shown, among the first principles of any *scientia*, on Aquinas's account, are proper principles; and these are propositions which are not even basic, let alone properly basic, since they are derived by induction from other propositions.

These considerations by themselves seem to me enough to undermine the claim that Aquinas should be taken to be a Foundationalist. In what follows I want to consider what theory of knowledge Aquinas does hold. The evidence adduced in the following section seems to me to constitute further reason, if any more is needed, for rejecting the view of Aquinas as a Foundationalist.

Reliabilism in Aquinas's theory of knowledge

If Aquinas is not a Foundationalist, what theory of knowledge does he hold?

Like Aristotle, Aquinas is a metaphysical realist. That is, he assumes that there is an external world around us and that it has certain features independently of the operation of any created intellect, so that it is up to our minds to discover truths about the world, rather than simply inventing or creating them. On Aquinas's account, the human intellect was created by God for the purpose of discovering such truths about the world. He says:

> All natural things are the product of divine art ... And so God gives to everything the best disposition, not best simpliciter but best as ordered to its proper end ... The proximate end of the human body is the rational soul and its activities ... Therefore, I say that God constituted the human body in the best disposition appropriate to such a form [i.e., the soul] and its activities.[77]

Elsewhere, he says:

> A soul is united to a body in order to understand, which is [its] proper and principal activity. And consequently it is necessary that the body united to a rational soul be best suited to serve the soul in those things which are needed for understanding;[78]

and, he maintains, "a person is said to have understanding or *scientia* insofar as his intellect is perfected to cognize what is true, which is the good of the intellect".[79]

Not only did God make human beings in such a way as to be optimally suited for the rational soul's cognition of what is true, on Aquinas's views, but the fact that human beings are made in the image of God consists just in their being cognizers of this sort. As Aquinas puts it, "only creatures that have intellects are, strictly speaking, in the image of God".[80]

On his view,

> since human beings are said to be in the image of God in virtue of their having a nature that includes an intellect, such a nature is most in the image of God in virtue of being most able to imitate God;[81]

and he goes on to say:

> being in the image of God pertains to the mind alone ... Only in rational creatures is there found a likeness of God which counts as an image ... As far as a likeness of the divine nature is concerned, rational creatures seem somehow to attain a representation of [that] type in virtue of imitating God not only in this, that he is and lives, but especially in this, that he understands.[82]

So, on Aquinas's views, God has made human beings in his own image, and they are made in his image in virtue of the fact that, like him, they are cognizers; they can understand and know themselves, the world, and the world's creator. Human beings can accomplish this feat just because God has designed them to be cognizers and attainers of truth. Strictly speaking, Aquinas's views about the way in which God has done so are outside the scope of this chapter,[83] but a very brief word on this subject will be helpful here nonetheless.

Human cognizing, on Aquinas's view, is a process which depends primarily on two cognitive capacities (or sets of capacities): sense and intellect. (He does recognize other faculties as well, such as phantasia and memory, but I am leaving them to one side here, for the sake of brevity.[84]) Aquinas's account of sensory cognition includes this claim: "With regard to

its proper object a sense is not deceived ... (unless perhaps by accident as a result of some impediment which happens as regards the [physical sense] organ)";[85] and in another place, speaking about proper sensibles, the non-propositional objects apprehended by one or another sense faculty, Aquinas says:

> With regard to its proper sensibles, a sense does not have false cognition, except by accident, and in only relatively few cases, because it does not receive the sensible form properly on account of some indisposition of the [physical sense] organ.[86]

This astonishing optimism as regards sensory cognition[87] is echoed by his view of the intellect: "The proper object of the intellect is the quiddity of a thing. And so as regards the quiddity of a thing, considered just as such, the intellect is not mistaken";[88] and he goes on to say, "in a simple consideration of the quiddity of a thing and of things cognized by means of it, the intellect is never deceived".[89]

Aquinas sees these claims about the senses and the intellect as connected. For example, he says:

> As a sense gets its form directly by a likeness of [its] proper sensibles, so the intellect gets its form by a likeness of the quiddity of a thing. And so, regarding the quiddity [of a thing], the intellect is not deceived, just as a sense is not deceived regarding [its] proper sensibles.[90]

For my purposes here, what is important about these implausible sounding claims is just the attitude Aquinas takes towards human cognitive capacities. On Aquinas's view, human cognitive capacities are designed by God for the express purpose of enabling human beings to be cognizers of the truth, as God himself is. In particular, when a human person uses the senses and the intellect as God designed them to be used in the environment suited to them, that is, in the world for which God designed human beings, then those faculties are absolutely reliable. In fact, not only are they reliable but as regards their proper objects it is even the case that, when they are functioning normally, neither the senses nor the intellect can be deceived or mistaken.

The nature of Aquinas's account of our cognitive capacities can be seen most graphically by considering what Aquinas has to say about Adam, the first human being created by God, in the period before Adam's fall, when Adam was still sinless. Sinless Adam, according to Aquinas, also was not deceived or in error with regard to any of his beliefs. Aquinas says:

> It could not be the case that, while innocence remained, a human intellect accepted anything false as true ... The rectitude of the

> original condition is not compatible with any deception on the part of the intellect.[91]

And in another place, he says: "Every error is either guilt or punishment, and neither of these could be in the state of innocence; therefore, neither could error."[92] And he goes on to explain:

> As the true is the good of the intellect, so the false is its evil ... If an opinion is false, it is a certain evil act on the part of the intellect. And so since in the state of innocence there was no corruption or evil, there could not be in the state of nature any false opinion ... And in this way in the intellect [of human beings in the original state of innocence] there could be no falsity.[93]

In a way, then, what has to be explained on Aquinas's views is not so much what accounts for the human ability to know as what accounts for the fact that human beings are sometimes in error. And, in fact, as the preceding quotations show, on Aquinas's views, because God has designed our cognitive capacities in such a way as to make us cognizers of the truth, it is only in our post-fall condition that error, deception, or false opinion is a possibility at all. As Aquinas sees it, error, deception, and false opinion have to be explained as either guilt or punishment.

It is not part of my purpose in this chapter to explain these views of Aquinas's about the design and function of human senses and intellect.[94] Here I want to call attention to these claims of Aquinas's about the senses and the intellect just to aid interpretation of his theory of knowledge. In light of Aquinas's views about human cognitive faculties, it seems reasonable to take his theory of knowledge as a species of externalism, with reliabilist elements. On Aquinas's account, when they function as they were designed to function in the environment in which they were designed to function, our cognitive faculties, and in particular our senses and intellect, work in a reliable way to yield knowledge of ourselves and everything else as well.

That this is Aquinas's understanding of the nature of knowledge helps explain the sort of discussion we find, for example, in his argument that the incarnate Christ has *scientia* acquired through experience. Aquinas does not argue for this conclusion by trying to make any claims about the kinds of beliefs that were basic for Christ or the way in which other beliefs of Christ's were derived from such foundations of Christ's noetic structure. Instead, he argues in this way that there was such *scientia* in Christ:

> [W]e must say that in the soul of Christ there was not only a possible intellect but also an agent intellect. Now if in other things God and nature made nothing in vain ... ,it is all the more the case

> that nothing in the soul of Christ was in vain. But anything that did not have its proper function would be in vain ... Now the proper function of the agent intellect is to produce intelligible species in actuality by abstracting them from phantasms ... In this way, therefore, we must say that there were some intelligible species in Christ received in his possible intellect as a result of the action of [his] agent intellect. And this is what it is for there to be acquired *scientia* in him.[95]

For Aquinas, then, a human being's knowledge (in all its kinds, including *scientia*) is a function of that person's using the cognitive capacities God created in human beings as God designed them to be used in the world God created them to be used in.

As I will try to show in the next section, it is not at all surprising to find a theory of knowledge of this sort in a theist, which may help to explain why Aquinas's approach to knowledge bears a strong resemblance to the theory of knowledge Plantinga himself develops after rejecting the views he mistakenly attributes to Aquinas.

Aquinas's approach to epistemology

It might occur to someone to object at this point that if my interpretation of Aquinas's theory of knowledge is correct, we should expect to find some explicit statement of it somewhere in his works. In fact, what we have is largely a discussion (as, for example, in the commentary on Aristotle's *De anima*) of the way in which the mind makes epistemic contact with things and uses that contact to acquire information and an exposition (as, for example, in the commentary on the *Posterior Analytics*) of *scientia*, which on my interpretation turns out to be not knowledge simpliciter but only a certain species of cognition. If Aquinas holds a theory of knowledge of the sort I have sketched, not Foundationalism but an externalism with reliabilist elements, why is there not in his works some straightforward presentation and analysis of it? On the view that takes Aquinas to be a classical foundationalist, Aquinas's commentary on the *Posterior Analytics* is his epistemological treatise. On my interpretation, very little in Aquinas's writings constitutes an examination of theories of knowledge, and the commentary on the *Posterior Analytics* is not a presentation of Aquinas's epistemology. If my interpretation is correct, what would account for this paucity of interest in the nature of knowledge itself? (In a subsequent section, I will also say something about how we are to understand the commentary on the *Posterior Analytics*.)

To see the answer to this question, it helps to consider theories of knowledge in terms of an analogy. Suppose we are reflecting not on our cognitive capacities and theories of knowledge, but rather on race cars and theories of

excellence in race car driving. Any good, complete manual presenting a theory of excellence in race car driving ought to include at least three parts. There might or might not be an introduction in which the manual explains what no one really needs to be told, namely, that excellence in race car driving is a matter of winning as many of the important races as possible. Then there needs to be (1) a section on race tracks, which says something about the environment in which the standard race car is designed to be driven. Next, there should be (2) a section on race cars themselves, and it should be divided into two parts. (2a) The first part should comprise information about the general mechanics of race cars; it should explain in general how such cars are built and how they are designed to work. (2b) The other part should evaluate the different firms which build such cars and should explain the extent to which various companies can be trusted to turn out excellent machinery. Finally, there ought to be (3) a section on race car drivers and what they need to do to drive well. This section should also have two parts. (3a) One part should present general advice on how to avoid crashes; (3b) the other should give information on what drivers can do to make their race cars go as fast and as far as possible.

As is evident, these parts of a theory of excellence in race car driving correspond roughly to elements in a complete theory of knowledge. Philosophical considerations about the environment in which our cognitive faculties operate, about what there is for our cognitive faculties to know, constitute part (1). Information about the way in which human cognitive faculties function (the sort of information currently given by neurobiology and cognitive psychology) and philosophical discussions of the reliability or non-reliability of human cognitive faculties respectively comprise the two parts of part (2). Epistemological theories about knowledge, about warrant, justification, and other central epistemological notions, fall under part (3); they give information on how to avoid falsehood and acquire truth. In modern epistemological theories, the emphasis has often seemed to be on the epistemological analogue to (3a), the avoidance of error and deception. But which of all these parts one emphasizes in one's epistemology or highlights for special concern is a function of one's whole worldview.

Given Aquinas's robust faith in a provident creator of the world who made human beings in his image in order that they might be, like himself, cognizers of the truth, it is not surprising that some elements of the theory do not get much explicit development or analysis in Aquinas's work. Aquinas takes for granted what might be in the epistemological analogue to the introduction, namely, that the goal aimed at in the use of human cognitive faculties is cognitive excellence or intellectual virtue. This view flows from his theological commitments and therefore does not receive lengthy argumentation. The epistemological analogue to the introduction, therefore, does not need or get a prominent place in Aquinas's discussions of human knowledge.

For roughly the same reason, it would be a mistake to look to Aquinas's work for detailed consideration of knowledge as a function of the reliable operation of human cognitive capacities. Given Aquinas's beliefs about God, it is not likely that the part of an epistemological theory corresponding to (2b), the section on the excellence of the equipment produced by various car makers, will be well developed in Aquinas's discussion of human knowledge. On Aquinas's views, the maker of human cognitive equipment is God, and his purpose in making that equipment is to enable human intellects to imitate him in his activity as a knower. This view is so fundamental to Aquinas's beliefs that he does not spend much argument on it. And it is entirely understandable that worries about the very possibility of knowledge, based on considerations of the unreliability of one or another human cognitive faculty, such as the worry raised, for example, by skepticism, should loom much larger in a theory of knowledge which is not firmly embedded in a theistic worldview.[96]

What is of far more interest to Aquinas than these issues is the analogue to (2a), the section on the mechanics of race cars. The epistemological equivalent of this section can be found in Aquinas's commentary on *De anima* and his other discussions of the way in which the human mind works, and he does give this subject considerable examination. (There is, of course, no reason why this part of Aquinas's thought cannot also be understood as part of his philosophy of mind. But insofar as his theory of knowledge takes knowledge to be a function of human cognitive capacities' operating as they were designed to operate, an explanation of the operations of human cognitive faculties will also be part of his theory of knowledge.)

As for the analogue to section (3), the driver's manual, the epistemological equivalent to (3) is a consideration of (3a′) how to avoid falsehood and (3b′) how to acquire truth, especially truths of a deep, significant, or far-ranging character. But here, too, which of these two parts one emphasizes is a function of one's general worldview. Aquinas does discuss, for example, the nature and detection of fallacies in reasoning or the way in which the mind can be deceived. But a driver who thought her car was built by God and she herself was under the direct providential care of God, who supposed that God himself wanted her to win races, might be less worried about the possibility of crashing and more concerned with doing her part to make the car go as far and as fast as possible. Similarly, Aquinas supposes that God is both the maker of human cognitive equipment and the one who designed that equipment for the purpose of acquiring truth. Consequently, it is not surprising to find that Aquinas devotes much less attention to questions about the avoidance of error or other undesirable cognitive states and much more attention to questions about the use of human cognitive capacities which yields the deepest or most important truths about the world and its creator.[97]

At any rate, expounding a method for acquiring significant and far-ranging truth is, in my view, the object of Aquinas's work on *scientia*,

especially in his commentary on the *Posterior Analytics*, as I will show in the next section.

Aquinas's commentary on the *Posterior Analytics*

As we have seen, *scientia*, on Aquinas's view, is the cognition of the causes of things, where the causes in question are not divine causes but belong to a lower, created order of causes. As Aquinas puts it:

> it is obvious that a cause is the middle in a demonstration, which produces *scientia*, because to have *scientia* is to cognize the cause of a thing. But a cause is what is sought in all the aforesaid questions [in which demonstration plays a part].[98]

In retrospect, it seems clear that this description by itself should have given us pause about accepting an interpretation of Aquinas as a Foundationalist whose theory of *scientia* is a theory of knowledge. A Foundationalist theory of knowledge is a theory which explains what counts as knowledge and what does not and which explains the trustworthiness of what counts as knowledge. But, as Aquinas presents it, the theory of *scientia* is a different enterprise; for him, *scientia* is a matter of cognizing causes of things, of finding causal explanations for things, so that what is sought in a demonstration producing *scientia* is not the conclusion of a demonstrative syllogism but rather its premises.

That is why Aquinas says, for example:

> There are certain things which we would not ask about with [any] doubt if we were to see them, not because *scientia* consists in seeing but because the universal, with which *scientia* is concerned, would be obtained by means of experience, on the basis of the things seen. For instance, if we were to see glass as porous and see how the light is transmitted through the openings of the glass, we would have *scientia* (*sciremus*) of why the glass is transparent.[99]

Similarly, he says:

> Suppose ... that someone were on the moon itself and by sense perceived the interposition of the earth by its shadow. He would perceive by sense that the moon was then eclipsed by the shadow of the earth, but he would not for that reason have full *scientia* of the cause of the eclipse. For what causes an eclipse in general (*universaliter*) is the proper (*per se*) cause of the eclipse.[100]

And he explains the general point of that example in this way:

> *Scientia* is superior to sense. For it is clear that cognition which is through a cause is nobler, but a proper (*per se*) cause is a universal cause ... and therefore cognition through a universal cause, which is the character of *scientia*, is more honorable. And because it is impossible to apprehend a universal cause by means of sense, it follows that *scientia*, which shows the universal cause, is not only more honorable than all sensory cognition but also than all other intellective cognition when it is of things which have a cause.[101]

Descriptions of these causes serve as the premises, rather than the conclusions, of demonstrative arguments. As Aquinas says in various places, "the middle of a demonstration is a cause";[102] and, he goes on to say, "by the middle of a demonstration all the causes [i.e., the formal, material, efficient, and final causes] are manifested, because any of these [four] causes can be taken as the middle of a demonstration".[103]

So, on Aquinas's views, demonstration is not a matter of starting with epistemically certain and properly basic beliefs and deducing conclusions which are consequently known with equal certainty, in order to have knowledge of a particularly rigorous sort. Rather, on his account, in order to find a demonstration we need to look for causes of what is described in the claim that is to be the conclusion of the demonstration. Once we have found the premises of a demonstration, we have *scientia* of the claim in the conclusion in virtue of having a causal explanation of the state of affairs described in the demonstration's conclusion. And what demonstration confers is not so much epistemic certainty as it is depth of understanding. Because Aquinas is often misunderstood on this score, Paul Durbin, in commenting on Aquinas's understanding of demonstration, says:

> After Descartes it has become necessary to distinguish Aristotelean "syllogismus" and "demonstratio" from a Cartesian, rationalist "deduction". Aristotle and St Thomas do not begin with self-evident principles and derive conclusions therefrom in a rationalist-deductive mode (even though *Posterior Analytics* is often interpreted this way); rather, they begin with a statement to be justified (it will become the "conclusion" only in a formal restatement of the argument) and "reduce" it back to its ultimate explanatory principles.[104]

When Aquinas himself describes what he is doing in his commentary on the *Posterior Analytics*, he describes his project in this way. On his view, there are two different processes human reason engages in; one is discovery, and the other is judgment. He says:

> following the path of inquiry or discovery, human reasoning proceeds *from* certain things understood simply, and these are first principles. And, again, following the path of judgment, human reasoning returns by analysis *to* first principles and ponders these discovered principles.[105] (emphasis added)

So, according to Aquinas, when we are engaged in what he calls 'discovery', we reason *from* first principles to conclusions based on them. On the other hand, when we are concerned with what Aquinas calls 'judgment', we reason from other things back *to* first principles by means of analysis.

On the common account of Aquinas as a Foundationalist, his commentary on the *Posterior Analytics* (and his other putative discussions of epistemology) would thus count as a description of discovery, since in those discussions Aquinas is supposed to be explaining how we proceed from first principles to the conclusions of demonstrative syllogisms that are known with certainty in virtue of having been derived in the demonstrative way from those first principles.

But in his introduction to his commentary on the *Posterior Analytics*, Aquinas takes just the opposite view. In that introduction, Aquinas explains that there are three different reasoning processes examined in Aristotle's logical works. Only one of these processes, the first one, yields *scientia*. Aquinas describes that reasoning process in this way:

> the part of logic which is principally devoted to the first process is called the judicative part, because judgment goes with the certitude of *scientia*. And because we cannot have certain judgment about effects except by analysis into first principles, this part is called "Analytics".[106]

And he goes on to say:

> the certitude of judgment which is had by analysis is either from the form of a syllogism alone (and the *Prior Analytics*, which is about the syllogism considered unconditionally, is devoted to this), or it is also from the matter [of a syllogism] together with [the form], because [its] propositions are *per se* and necessary (and the *Posterior Analytics*, which is about the demonstrative syllogism, is devoted to this).[107]

On the other hand, Aquinas explicitly dissociates discovery, the reasoning *from* principles *to* conclusions, from *scientia*. He contrasts the analysis of demonstration, which on his view does lead to the certitude and *scientia*. with a second reasoning process which does not yield *scientia*; and this second process, he says, "is called 'discovery' ... The *Topics* or dialectic is

devoted to this."[108] So is rhetoric, though in a somewhat different way, as Aquinas goes on to explain in this same passage. So on Aquinas's account discovery is a part of dialectic or rhetoric, rather than of demonstration; and what is covered in his commentary on the *Posterior Analytics* is not discovery but judgment.

But, on Aquinas's views, judgment is a matter of returning to first principles, rather than beginning from them and deducing other propositions from them. This process of reasoning, examined at length in the *Posterior Analytics*, is a matter of finding the premises or "middles" of a demonstrative syllogism; and these middles are, in general, the causes of what is described in the conclusion of a demonstrative syllogism. The process of finding middles and using them to make demonstrative syllogisms continues until the causes being used as middles are traced back to the first principles proper to the *scientia* in question.

So the subject matter Aquinas takes to be covered both in Aristotle's *Posterior Analytics* and in his own commentary on it has as its main emphasis finding ultimate causal explanations for what is described in the conclusions of demonstrative syllogisms. The point of this process is evidently to yield a deeper understanding of the nature of the state of affairs being described in the syllogistic conclusions.

This interpretation of Aquinas's views helps to clarify some of his examples presented above. For instance, on this interpretation, it is easier to understand Aquinas's example involving the lunar eclipse. Both the person who is on the moon watching the interposition that produces an eclipse of the moon on earth and the physicist who understands eclipses know that the moon is sometimes eclipsed (or is now eclipsed). But only the physicist has *scientia* of that fact because only the physicist understands the causes of eclipses in general. On this interpretation, then, a person has full *scientia* of something in virtue of knowing the general or the ultimate causal explanation of it.

Conclusion

On this interpretation of Aquinas's concept of *scientia* and theory of knowledge, then, how shall we translate *scientia*? 'Discipline', 'expertise', 'body of knowledge' are all possibilities, except that they leave us no easy analogue for the verb '*scire*'. 'Understanding' might do the job, except that it has unfortunately become the conventional translation for Aquinas's '*intellectus*'. Perhaps the best option is just to translate '*scientia*' by its cognate, 'science', with a reminder to the reader that science so understood ranges from, for example, mathematics to metaphysics. Understanding *scientia* as science in this broad sense will help us to digest some of Aquinas's examples of demonstration, which would be surprising and perplexing on a Foundationalist interpretation of his theory of knowledge.

For instance, in illustrating the different kinds of causes that can serve as the middle of a demonstration, Aquinas gives this example as a case of a demonstration in which the middle is an efficient cause:

> [Aristotle] presents an example of [a demonstration based on] an efficient cause using a certain story about the Greeks. Allied with certain other Greeks, the Athenians once invaded the Sardians, who were subject to the king of the Medes, and therefore the Medes invaded the Athenians. [Aristotle] says, therefore, that one can ask the reason why the war of the Medes with the Athenians occurred, and this reason why is a cause of the Athenians' being attacked by the Medes ... The middle ... in this case has to do with the Athenians who first began the war. And so it is clear that here a cause which is efficient (*primo movit*) is taken as a middle.[109]

It is not at all evident how this example could be construed on a Foundationalist interpretation of Aquinas. What combination of self-evident propositions and propositions evident to the senses of a person living in Aquinas's time could yield the conclusion that the Medes made war on the Athenians?[110] But on the account I have been developing here, it is possible to accommodate this example if we take 'science' broadly enough to include the social sciences as well.[111]

The fact that in this passage Aquinas is obviously discussing an example of Aristotle's should also serve to remind us that the question of the relation of Aquinas's theory of knowledge to that of Aristotle still remains. On Irwin's view of Aristotle's *Posterior Analytics*, Aristotle is a foundationalist, at least at the time of writing that work. I have been at pains to show that Aquinas's commentary on the *Posterior Analytics* cannot be interpreted as presenting his theory of knowledge as a whole, that '*scientia*' for Aquinas is not equivalent to 'knowledge', and that Aquinas's epistemological position is not correctly characterized as Foundationalism.

I am not certain what species of foundationalism Irwin is attributing to Aristotle; but if it is an internalist theory of knowledge or if it bears a family resemblance to Foundationalism, then, on my interpretation of Aquinas, there are two ways of thinking about Aquinas's relation to Aristotle. One is that Aquinas completely misunderstood the nature of Aristotle's treatise and that although he thought he was simply explaining and developing Aristotle's thought, in fact he was radically altering the nature of Aristotelian epistemology. The other is that Aquinas was an astute reader of Aristotle and that the evidence gathered here to reject the view of Aquinas as a Foundationalist is some reason to rethink at least one current account of Aristotle. Either of these possibilities is compatible with the interpretation of Aquinas I have defended here, but deciding which one to accept belongs to the province of historians of ancient philosophy and is outside the scope of this chapter.

On that score, then, this chapter will come to no judgment. When the issue is adjudicated, however, it should be resolved with a clear recognition of Aquinas as holding not Foundationalism but rather a sophisticated theological externalism with reliabilist elements, and his commentary on the *Posterior Analytics* should be understood not as a treatise presenting Aquinas's theory of knowledge but rather as an exposition of Aquinas's philosophy of science, where 'science' is very broadly understood to include all bodies of knowledge.

8

THE MECHANISMS OF COGNITION

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. "A big black and white one with a smudge on its nose. It's Max, the neighbors' cat. He's stalking birds. If I raised the bird feeders another three feet, Max couldn't get the birds so easily; but then the feeders would be a lot harder for me to fill, too. I should really talk to the neighbors about putting a bell on that cat." In this unremarkable exchange, Hannah does several very remarkable things, ranging from describing what she sees to reasoning discursively. There is currently an intense research effort 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 remarkable for their success. How does Hannah do it?

This is a question about the mechanisms of cognition. In raising it, I am asking not about what constitutes one or another sort of cognition, but rather about the means and the processes by which cognition of all sorts is accomplished. Whatever we think about the nature of the mind, we all agree that Hannah's body is involved in her engaging in the cognitive processes manifested in the example. But how does Hannah achieve cognition? The light reflecting from the cat strikes the glass of the kitchen window as well as Hannah's eyes, and yet Hannah sees Max but the kitchen window does not. What is it about Hannah that enables her to use the light as she does?

Contemporary thinkers are interested in questions like these, and they attempt to solve them by research into neurobiology, computer science, and psychology, among other disciplines. Aquinas was 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 inferences about faculties postulated to explain these observations.[1] In this chapter, 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. The end result, in my view, is surprisingly insightful, with much to teach us even today.

I say '*surprisingly* insightful' not just because it is surprising that Aquinas produced so sophisticated a theory of cognition without any of the benefits of modern science and technology, but also because it is so hard for us to extract his theory and comprehend it. What he has to say about human cognitive processes is couched in an array of unfamiliar medieval technical terminology, and his remarks about it are often embedded in forbiddingly esoteric discussions, such as his arguments against the Averroists' theory of the unity of the agent intellect or his theorizing about the way in which the second person of the Trinity is related to the first. Worse yet, when he does use some terminology that is apparently familiar to us, such as 'form' or 'spiritual' or 'sensory cognition', we are likely to be misled all the more, because it turns out that the meanings he associates with such terms are different from those we are likely to attach to them. This state of affairs helps to explain the diversity of theories scholars have claimed to find in Aquinas's account of cognition. More patience and caution are needed here than in many other parts of his philosophical system.

Direct and unmediated cognition

It may also be helpful to clarify two points at the outset, which might otherwise cause confusion later on.

The first has to do with the notion of direct and unmediated cognition. Is Aquinas's account of cognition one that attributes to human beings direct and unmediated cognition of extramental reality, as historians of philosophy often say it is? The answer to this question depends not only on our reading of Aquinas, but also on what we mean by 'direct' and 'unmediated'. A full consideration of the relevant issues would take us too far afield, but for present purposes we can approach the question roughly in this way.

If by 'direct cognition' we mean that the cognizer apprehends the object of cognition in one indivisible act of cognition, without anything that counts as a means of cognition or a mechanism causing cognition, then on Aquinas's account perhaps only God knows anything directly. Similarly, if what we mean by 'unmediated' is that there is no intermediary process of any sort, including such processes as representation, between the cognizer and what she cognizes, then here, too, for Aquinas God alone will count as having unmediated cognition. But this is a fairly stringent interpretation of the notion of direct and unmediated cognition, and it has the implausible consequence that, on contemporary neurobiological accounts of the way in which human beings perceive things, no human being knows any extramental object with direct and unmediated cognition.

And so we might also consider a more plausible account of direct and unmediated cognition. On this less stringent account, by 'direct' cognition

we mean just that a person cognizes something but does not cognize it solely in virtue of cognizing something else, as the viewer at home knows what is happening in the football game solely in virtue of knowing what is happening on the television screen. There is a correspondingly more moderate interpretation of 'unmediated cognition', too. In this sense, put roughly, a cognition is unmediated if there is no significant mechanism external to a cognizer through which he cognizes the object of his cognition.[2] In this sense, what is seen through a satellite's imaging system is mediated cognition, but what is seen unaided by such external devices is unmediated cognition, even if the cognition in question is mediated by the brain's processing.

On this more moderate interpretation of the notion of direct and unmediated cognition, Aquinas's account of cognition does ascribe direct and unmediated cognition to human beings.[3] Aquinas says:

> we say that corporeal creatures are seen *immediately* only when whatever in them can be conjoined to sight is conjoined to it. But they cannot be conjoined [to sight] by their essence because of [their] materiality, and so they are seen *immediately* just when their similitude[4] is conjoined to the intellect.[5] (my emphasis)

Blindsight and agnosia

The second preliminary point I want to make here has to do with perception. What Aquinas has to say about sensation is often taken as his account of perception, but whether this standard interpretation is right depends at least 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 perception can still occur when some parts of the usual process are absent, and how many parts 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 much-discussed phenomenon of blindsight. (This neurobiological debility and the one mentioned in the next paragraph will be helpful to us later in this chapter as well.) A patient with blindsight has no defects in his eyes and no neurological defects in the lower-level processing of visual data; but he will still be unable to have conscious access to the processed visual data. He will therefore claim, 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'.

Or, to take one more example, 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 (or touch, etc.) and although they are familiar with such objects, they have a profound inability to categorize those objects relying just on data from the afflicted sense.[6] Consequently, because of their disorder, visual agnosia patients function in some respects as if they were non-seeing. 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.[7]

Some philosophers who in effect agree with such neurological assessments argue that 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*.

With these preliminary cautions, we can now turn to Aquinas's account of the sensory powers.

The 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".[8]

Each of the senses has both a proper "sensible" and a common "sensible". Aquinas tends to use the Latin translated 'sensible' as a noun to mean just that which the sense takes in, as distinct from what is cognized by the sense. So, for example, although the sense *object* I see in front of me is my coffee cup, the *sensible* taken in by sight is color, according to Aquinas (or light of different wave lengths, according to contemporary accounts). 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. There are many proper sensibles for touch, for example, including hot and cold, wet and dry, heavy and light. 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.[9]

Although what the senses take in are the proper and common sensibles, what is sensed by this means are extramental objects: "the senses when they are active are of singular things which are outside the soul."[10]

Besides the external senses, Aquinas recognizes a number of internal senses: the common sense, phantasia and imagination, the estimative power, and the memorative power. Like the external senses, these powers use corporeal organs, in particular, the brain. Phantasia and imagination are connected, and I will take them up at more length below. The memorative power is the storehouse for sensory impressions and is distinct from intellective memory; I will briefly discuss both sorts of memory after examining Aquinas's account of phantasia. The estimative power is similar to those animal instincts by which non-human animals sense what to seek out and what to flee, what is useful to them and what is hurtful.[11] In human beings, the estimative power compares "individual intentions", as intellect compares universal intentions;[12] it apprehends individual things insofar as they are "the terminus or the source of some action or passion".[13] Finally, the common sense is the power that integrates information from the various external senses. All the senses feed into the common sense, and impressions in any of the external senses are followed by impressions in the common sense. The common sense is therefore the power that enables us to discern the white from the sweet, which no individual external sense could do.[14] Aquinas is clearly right to hold that some integration among the senses is needed and that such integration requires a power other than the powers of the individual senses themselves.[15]

Except for a brief discussion of the memorative power, in what follows I will consider only phantasia and imagination among the internal senses. I will also leave to one side those parts of Aquinas's account that are not directly relevant to understanding his view of the cognitive faculties (as distinct, for example, from understanding his views of the way in which a cognitive faculty interacts with the will). So, for example, Aquinas has interesting things to say about recall and the way in which recall is to some limited extent under voluntary control;[16] he also makes remarks in various places about attention and the way in which the will can direct attention.[17] But I will leave these parts of his account to one side as well in the interest of focusing investigation on the heart of his account of cognition.

The nature of sensible *species*

Our senses contribute to cognition by putting us in epistemic contact with extramental material objects.[18] Aquinas says:

> Our cognition takes its beginning from things and proceeds in this way: it begins, first, in sense and is finished, second, in intellect, so that sense is found to be a kind of intermediary between things and the intellect.[19]

The senses participate in such cognition by receiving a "sensible *species*" from the extramental thing presented to them. What exactly a sensible *species*[20] is, however, 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.[21] Consequently, it is wiser here to leave the term '*species*' in Latin and look at Aquinas's own description of the nature and function of a sensible *species*.

For Aquinas, a sensible *species* is the form of a matter-form composite. He says, "A sensory power is receptive of *species* without matter"[22]; 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".[23]

By thinking of a sensible *species* as an immaterial form, Aquinas is not taking it to be a sort of ghost or, on the other hand, as nothing more than a shape separated from the matter that it shapes. Rather, as I argued in an earlier chapter,[24] where material objects are concerned, by 'form' Aquinas generally means something like a configurational state. The form of a material object is the configurational state in which the matter of that object is arranged. The sensible *species* is thus the form or the configurational state of what is sensed, which the sensory power receives.

It is important to emphasize that a sensible *species* is not itself what is sensed. Instead it is the means by which the senses sense extramental things. There is room for confusion here, because Aquinas does talk about the sensory power apprehending the sensible *species*, and locutions of this sort can give the mistaken impression that what the senses sense, on Aquinas's view, is in fact the sensible *species*, contrary to what I just claimed. So, for example, Aquinas says:

> With regard to the apprehension of the senses, it is important to know that there is a certain apprehensive power which apprehends the sensible *species* when the sensible thing itself is present, and this is the sense itself. And there is another apprehensive power which apprehends the sensible *species* when the sensible thing is absent, and this is the imagination. And so the sense always apprehends a thing as it is, unless there is some impediment in the [sensory] organ.[25]

Especially because Aquinas talks about the sense's apprehending both an extramental thing and a sensible *species*, it is possible to suppose that 'apprehending' is for him a term of cognition, so that in this passage he is claiming that what the senses cognize is both the sensible *species* and extramental things.

But such an interpretation is contradicted by many passages in which he claims explicitly that the sensible *species* are *not* what the senses cognize. Rather they are just the means by which the senses participate in cognition:

"The sensible *species* is not what is sensed, but rather that by which a sense senses."[26]

Furthermore, in other places, Aquinas sometimes talks not so much of the senses' apprehending sensible *species* as of their *receiving* the *species*. So, for example, he says, "an animal by means of its sensitive soul not only receives the *species* of sensible things ... but also retains and preserves them".[27]

It is clear that just receiving is not necessarily a cognitive act for the senses; we don't suppose that our eyes perceive light just in virtue of taking in light. So it seems as if in some contexts 'apprehending' is a synonym of the non-cognitive 'receiving' for Aquinas.

In the light of these passages, it seems reasonable to take apprehending as a genus which can be divided into cognitive and non-cognitive acts (just as there can be, for example, cognitive and non-cognitive acts of grasping). When the senses apprehend some extramental thing, they have a cognitive grasp of it; but when they apprehend a sensible *species*, they simply receive it, without its being the case that the *species* they are receiving is itself the object of sensory cognition. This interpretation of apprehending is natural enough; and if we do not provide some such interpretation, we will have to ascribe to Aquinas an obvious contradiction, namely, that the senses both do and do not have sensible *species* as the objects of cognition.[28]

For these reasons, we should understand Aquinas's view of sensible *species* in this way: the sensible *species* is an immaterial form which is received by the senses although not cognized by them.

The reception of sensible *species*

Here, however, another apparent problem arises 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.[29] Since the *species* is the 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 a form of the stone on the eye would not bring it about that the eye senses the stone; rather the eye would take on the characteristics of the stone.[30]

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. The form of a stone naturally or materially received in matter produces in that matter the characteristics of a stone.[31] 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.[32]

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.[33] 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.[34]

Elsewhere he says:

> 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 intention[35] 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.[36]

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 the object's form is its configuration. When matter is configured in a certain way, say, with the configuration of a stone, the matter so configured is a stone. What is harder to understand is the "spiritual", "intentional", or "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 confer on the eye the substantial or accidental characteristics of a stone. A purple stone visually cognized does not make the eye purple even though the form of the stone's color is transferred to the eye.

So 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. And yet how is this possible? If the eye really does accept the configurational state that gives some matter the features of a stone, why would not that configurational state also give the eye those same features? On the other hand, if the eye does not take on any and every features of a stone in virtue of receiving the forms that give those features to the stone, in what sense does the eye receive the 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 form of material objects. The configurational state of the city's streets is transferred to the paper of the map, but it is transferred in such a way that the paper which receives that configurational state is not configured by it in the way that the matter of the streets is. Because the configurational state of the streets is 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 state is received "spiritually" in the paper, the map can be carried in the car. If the whole configurational form of the city streets were received in matter of the map's paper with natural reception (supposing such reception to be even possible), it would make that matter itself city streets. In that case, we would have a reproduction of the city's streets, but we would not have a map.

A map thus seems like a good example of the spiritual or immaterial reception of a form, and so does anything else in which a configurational state is preserved in an encoded fashion. Blueprints of a building and wiring charts are further examples.

Furthermore, we could have the spiritual reception of a form 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 the 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 learn 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.

Material change and reception of sensible *species*

Two more points about the reception of forms in the process of sensing are worth making here.

First, although the senses receive sensible *species* with spiritual reception, some senses *also* receive some of them with natural reception. The skin, for example, becomes hot when it senses something hot. Even in the case of sound, the local motion in the ear that conveys sound produces local motion in the inner ear. Sight is the major exception to this rule: "in the change (*immutatio*) in the power of sight, there is only spiritual change"[37], because in receiving color, the proper sensible for sight, the eye does not itself take on the color of the object it is sensing.

Second, the claim that a sense receives the sensible *species* with spiritual or intentional or immaterial reception does not by itself make clear whether or not that reception consists of a change in the matter of the sense. The intellect receives *species* with spiritual reception, but that spiritual reception is not itself a change in something material, because intellect does not operate in a bodily organ, according to Aquinas. On the other hand, as my examples above make clear, 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,[38] but I think that 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 must be anything ghostly about the spiritual 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.[39]

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."[40]

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.[41]

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;[42] 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 a sensible *species* is an immaterial form received with immaterial or spiritual reception, but that this reception consists in a change in the matter of an organ of the body. The reception is "spiritual" or "immaterial" in the sense that, for example, the way in which the matter of DNA contains the forms of hemoglobin does not turn the matter of the DNA into hemoglobin. Or, as Aquinas would put it, the DNA is assimilated to the protein as regards the form but not as regards the matter. Aquinas's "spiritual" reception of forms is thus like the coding of maps or blueprints. This is, of course, also the way we ourselves think sensation occurs, encoded information being received in virtue of a change in the matter of a corporeal sense organ.

Medium and similitude

Since this process – the spiritual reception of an immaterial sensible *species* by means of a change in matter – is common to both sense organs and the medium between the sense organs and the thing sensed, it clearly is not itself sufficient for any cognitive process to occur. Before going on to consider what else is necessary for cognition, it will be helpful to consider briefly two more parts of Aquinas's account of sensible *species*: first, the

nature of the media through which the *species* are propagated, and second, the way in which the *species* is a similitude of the thing sensed.

On Aquinas's account, sensing always takes place through a medium. Part of his reason for thinking so is that he accepts the principle which has been a staple of modern physics until very recently, namely, that there is no action at a distance: "Bodies do not change one another unless they touch one another."[43]

Since there is distance (however small) between an object sensed and the sense organ it affects, the sensible *species* must pass from the object into a medium, which propagates it to the sense organ. Air and water are external media for the senses.[44] For touch there is also an internal medium, namely, flesh, which conveys the sensible *species* to bodily organs of touch within the flesh.[45] For some of the senses, the sensible *species* is received in the medium with natural reception as well as a spiritual reception (just as in the case of some of the senses themselves). Sight is the main exception here, too. With regard to its medium, there is no natural reception of the *species*, and one cannot perceive the change by which the medium is affected. But the sensible *species* of all the senses affect the medium with spiritual reception.[46]

Finally, Aquinas often characterizes sensible *species* (as well as intelligible *species* and phantasms) as similitudes. The Latin '*similitudo*' is commonly translated 'likeness', and this translation has given some readers the impression 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."[47]

Aquinas makes many distinctions among similitudes or ways of sharing forms, 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 (*convenientia in natura*), 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 a cognizer with respect to what is cognized.[48]

He makes a related point in a different place:

> 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.[49]

So similitude encompasses different kinds of agreement in form. Pictures or pictorial resemblances will count as similitudes, but so will the configuration of 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. This last example is one in which the similitude is grounded in an agreement of nature, when the form of one thing is received in another with natural reception. But in cognition the similitude is based on the spiritual reception in the cognizer of the form of the thing cognized. A 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 indicating just a pictorial resemblance.

The notion of representation in this context may mislead some readers, and so it may be helpful to recall the point made at the outset of this chapter about direct and immediate cognition. Nothing in Aquinas's theory of similitudes as representations keeps him from holding that human beings cognize things in extramental reality directly and immediately, because such similitudes are only the means by which cognition occurs and are not themselves the objects of cognition. On Aquinas's view: "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." [50]

Phantasms

After the activity of the senses, the next stage in the process of cognition involves the processing of phantasms. But Aquinas's views about phantasms are a perplexing part of his account of cognition since, at first glance, 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, at the outset, it is not clear why sensible and intelligible *species* (the intellect's analogue to sensible *species*) are not together sufficient to produce the cognition of some object presented to a sense. As far as that goes, it is not immediately clear why sensible *species* by themselves are not enough to bring about such cognition.

We can divide Aquinas's central thesis about phantasms in human cognition into two major parts. The first part is the claim that, for human beings, all cognition is dependent on 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.[51]

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."[52]

The second part of Aquinas's central thesis about phantasms is the claim that, for human beings, it is not possible to have any cognition of a material particular without a phantasm.

The role of phantasms in sensory cognition

I will leave this second claim for the subsequent section on the cognition of particulars; in this section I will confine the discussion to Aquinas's views on the nature and function of phantasms in order to examine the first claim, that cognition in general is dependent on phantasms.

Like sensible *species*, phantasms are similitudes of particular things;[53] and like sensible *species* they exist in corporeal organs.[54] 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.[55]

Finally, the cognitive power that is phantasia is dependent on sensory powers. Although Aquinas reports approvingly Aristotle's position that "phantasia is not sense",[56] he 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 (*sentiuntur*).[57]

And elsewhere he says: "Phantasia is nothing but motion produced by the senses in act".[58]

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? And what is the role of phantasms in cognition?

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".[59] 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."[60]

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'."[61]

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."[62]

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 imagination as a part of the same power that is phantasia; and another important clue to his view of phantasia comes from what he says about the process of imagining. He says: "The experience (*passio*) of phantasia is in us whenever we wish, because it is in our power to form something, as it were, 'appearing' before our eyes, such as gold mountains, or whatever we wish."[63]

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 sensing something.[64]

On his view, the process of imagination, which is operative also in sleep and which we can produce 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. And so Aquinas relates 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.[65]

Finally, Aquinas sometimes talks about our "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."[66]

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".[67]

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 intellectively cognized".[68]

So it seems that for Aquinas, phantasia is the cognitive power that makes things appear to us or that gives us access to the sensory data taken in by the senses;[69] or, as we would put it, phantasia is the power that produces the conscious experience which is a component of ordinary sensing.[70]

Phantasia and consciousness

Understanding phantasia in this way helps explain the difference between phantasms and sensible *species*. 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. 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. Furthermore, the difference between phantasia proper and imagination is a matter of whether or not the sensory powers are operating simultaneously and in conjunction with the inner sense, and imagination obviously does involve conscious experience. So it seems reasonable to assume that for Aquinas phantasia proper also produces in us conscious experiences, only conscious experience of the extramental reality being concurrently 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 sensible *species* of those things into phantasms. Without the phantasms, the sensible *species* alone would not produce conscious experience of what is sensed.

On this interpretation of phantasia, a person who had only sensible *species* but no phantasia would be like a blindsight patient. A blindsight patient receives 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. It is hard to know how to describe his situation exactly, partly because we are still at a loss for a good way to describe consciousness, and so it is easier to think about what the blindsight patient cannot do, rather than describe what normal human beings usually do. Out of the incoming visual data from his normally functioning senses, the blindsight patient cannot get conscious visual experience of extramental reality. 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 in connection with the visual sense. He has the sensible *species* of objects presented to his eyes, but no phantasms of them.

This explanation of phantasia helps explain why Aquinas supposes that there are two sorts of memorative powers, one associated with phantasia and one with intellect. Phantasia and the senses both belong to what Aquinas calls 'the sensitive soul', the part of the soul having to do with sensing. As part of the sensitive soul, the memorative power associated with phantasia functions to preserve and recall phantasms.[71] Presumably, memory at this level would consist of something like replaying the internal movie of previous sensory experience, though with some phenomenological indication that the sensory experience being reviewed is a past experience. It thus differs from the remembering associated with intellect, which need not have any associated imagery. That we in fact do have a memory faculty of the sort Aquinas associates with phantasia is made dramatically evident in clinical cases in which the sensory memory of an experience – the internal movie – has been suppressed but is subsequently released, sometimes being played over and over again to the torment of the rememberer.[72]

Sensory cognition and perception

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, as I said at the outset, 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",[73] then we would have to deny that on Aquinas's account the functioning of the sensory powers together with the phantasia gives us perception. It is true that, on the interpretation argued for here, sense and phantasia 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 agnosic for all senses. Even though a person with only senses and phantasia 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 don't 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.[74] 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's a cat", since a judgment of that sort requires what Aquinas calls compounding and dividing,[75] and that activity is the second operation of the intellect.

Aquinas's account of cognition, then, contains a distinction that is the equivalent of the distinction between seeing and seeing as. If it is possible for there to be seeing without any seeing as, then a person who was only seeing would be a person in whom sensory powers and phantasia were working, but whose intellect was not functioning in conjunction with that seeing.

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. Certainly, in the normal condition, on Aquinas's view, the senses and the phantasia function together with the intellect. But on his view, human cognitive processes are analyzable 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 cup, for example – as soon as it is presented to the senses, if the perceiver's cognitive faculties are working properly.

Aquinas's central thesis about phantasms

Given this way of thinking about the functioning of phantasia, it is not so hard to understand the first part of Aquinas's central thesis about phantasms, namely, that cognition in general is dependent on phantasms. Aquinas does not mean that it is impossible for a human being in a condition of temporary sensory deprivation to think about, say, the Pythagorean theorem.[76] Rather he means that perception is the starting point for human cognition in general. A human being who came into existence deprived of every sensory power would be completely dysfunctional intellectually, too. On this way of interpreting his account, phantasms are essential for intellectual functioning because they are necessary for perception. So, for example, Aquinas says: "We cognize incorporeal things, for which there are no phantasms, by comparison with sensible bodies, for which there are phantasms."[77]

It is not the case, then, that every act of intellect is accompanied by an act of phantasia; rather, as part of perception phantasms are necessary for acts of cognition that use or depend on perception. Even many apparently purely intellectual acts will rely on perception and phantasms indirectly, since they will rely on inspection of examples drawn from things perceived or imagined.

We have done enough, I think, to understand the first part of Aquinas's central thesis about phantasms, namely, that cognition is dependent on them. But the second part of that thesis still remains, namely, that it is not possible to have any cognition of a material particular without a phantasm. For Aquinas, there is one sort of cognition which is always accompanied by the functioning of phantasia. On his view, without a concurrent act of phantasia it is not possible for the intellect to cognize a material particular. We will, however, be in a better position to understand this second part of his central claim about phantasms when we have looked in some detail at what he says about the functioning of the intellect, to which we can now turn.

Intelligible *species*

For the intellect, the analogue to the sensible *species* of the senses is what Aquinas calls 'the intelligible *species*'. Intelligible *species* share many of the characteristics of the sensible *species* and the phantasms. Like sensible *species* and phantasms, the intelligible *species* are immaterial forms that are means of cognition and similitudes of things outside the mind:

> The similitude of a thing that is understood[78] – which is an intelligible *species* – is a form in accordance with which the intellect understands"[79];
>
> [The] similitude of a visible thing is that in accordance with which the sense of vision sees; and the similitude of a thing that is understood – which is an intelligible *species* – is a form in accordance with which the intellect understands".[80]

As in the case of the sensory powers, what the intellect knows primarily is extramental reality, not the intelligible *species*: "the intelligible *species* is related to the intellect in this way: it is that by means of which (*id quo*) the intellect understands".[81]

The intellect, however, is self-reflective in a way the sensory powers are not; and so it also knows itself, its acts and processes. Consequently, the intelligible *species*, unlike the sensible *species*, is *also* an object of knowledge, but only when the intellect reflects on itself:

> in one and the same act of reflection, the intellect understands both its own understanding and the *species* by means of which it understands; and so the understood *species* is, secondarily, what is understood, although what is understood primarily is the thing of which the intelligible *species* is the similitude.[82]

Like the sensible *species*, the intelligible *species* is received into the intellect in accordance with the mode of the knower, not in accordance with the mode in which the form inheres in the extramental object.[83] Consequently, the intelligible *species*, like the sensible *species*, is received with spiritual or immaterial or intentional reception, rather than with the natural reception it has in the extramental material object it informs. Unlike the sensible *species*, however, the spiritual reception of the immaterial form does not take place in a bodily organ and does not depend on material changes in such an organ, because on Aquinas's view the intellect is entirely immaterial.

The order of causation in intellective cognition

One of the biggest differences between the external senses and the intellect is that the intellect is active as well as passive. In the cognitive processes of the sensitive part of the soul, there is a causal chain that begins with an extramental object or set of objects. The extramental object causally affects the medium between that object and the sense it affects; the medium in turn makes an impression on the senses; and the senses affect the phantasia in such a way as to cause the production of the phantasms. But after the phantasms have been produced, the order of causation in the cognitive process is

reversed. Phantasms do not act with efficient causation on the intellect. On the contrary, the intellect acts with efficient causation on the phantasms in the process Aquinas calls 'abstraction'.[84] In fact, according to Aquinas, the phantasms, lodged in a corporeal organ, could not act on the immaterial intellect, because, as he says frequently, "nothing corporeal can make an impression (*imprimere*) on an incorporeal thing".[85]

So for Aquinas, cognition is not just a matter of the impact extramental reality makes on the mind; it also depends on the intellect's action on the encoded information delivered and processed by the senses. Although he turns out to have been wrong in his view that the intellect uses no bodily organ, he has been amply vindicated in his view that cognition requires the intellect's active processing,[86] and not just its passive reception of sensory information.[87]

Aquinas thinks of the intellect as divided into an active part and a passive part. The active part, generally called 'the agent intellect', abstracts the intelligible *species* from the phantasms and deposits them in the passive part of the intellect, which is generally called 'the potential intellect' or 'the possible intellect'. Aquinas is concerned to defend the commonsensical view that each human being has an intellect of her own, as distinct from the view which he associates with Averroes and some of Aquinas's own colleagues (the so-called 'Latin Averroists') who were sympathetic to Averroes's position, namely, that there is only one intellect for the entire human *species*.[88] He also has to contend with an Augustinian tradition that takes divine illumination to be necessary for any act of cognition.[89] He of course credits God with being the source of human cognitive powers, but he denies that every human cognitive act requires a special divine act of illumination.[90]

The proper object of the intellect

Just as the external senses have proper objects, so the intellect also has its proper object, namely, the quiddity of a material thing, which it abstracts from the phantasms.[91] The process of abstraction is a matter of removing or ignoring the many material accidents of a thing as preserved in the phantasm and focusing instead just on the thing's quiddity. By 'quiddity' here Aquinas means that form of a thing that put it into one rather than another *species* or genus, its nature or essence. Natures do not exist in the world on their own; in the world they exist only as incorporated into the things that have natures.[92] Nonetheless, the agent intellect separates the quidditative form from a material thing, and that form is the intelligible *species* abstracted from the phantasms. So, Aquinas says: "to cognize what is in individual matter but not *as* it is in such matter is to abstract a form from individual matter, which the phantasms represent".[93]

And he goes on to say:

> nothing keeps us from intellectively cognizing (*intelligi*) the color [of an apple] without intellectively cognizing the apple. Similarly, I hold that those things that are part of the nature (*ratio*) of any *species* of a material thing – such as a stone or human being or horse – can be considered apart from the individual principles, which are not part of the nature (*ratio*) of the *species*. And this is abstracting the universal from the particular, or the intelligible *species* from phantasms – that is, considering the nature (*natura*) of a *species* without considering the individual principles represented by the phantasms.[94]

In abstracting the intelligible *species* from the phantasm, then, the agent intellect strips the phantasm of the particular material characteristics of the thing whose similitude the phantasm is. But the abstraction does not strip from the phantasm every connection with matter. Aquinas says:

> the intellect abstracts the *species* of a natural thing from individual sensible matter, but not from common sensible matter. For example, it abstracts the *species* of a human being from *this* flesh and *these* bones, which do not belong to the nature (*ratio*) of the *species* but rather are the parts of an individual ... But the *species* of a human being cannot be abstracted by the intellect from flesh and bones [generally considered].[95]

The operations of the intellect

When the agent intellect has accomplished the abstraction, it delivers the intelligible *species* to the potential intellect, which receives and preserves the form. Because the potential intellect can receive an infinite number of such forms, Aquinas often speaks of it as a blank slate, which can be written on over and over again. This metaphor is sometimes interpreted as if Aquinas were claiming that there is nothing innate in human intellect. But this is a misinterpretation of his metaphor. What he wants to call attention to is just the fact that the intellect, like a slate, can receive one form after another. But the metaphor should not be taken to mean that on Aquinas's view there is nothing hardwired into our intellects.

Aquinas does, in fact, think that there are no innate intelligible *species*; we must acquire all our intelligible *species* from the phantasms, and that is one of the reasons why cognition in general is dependent on phantasms. But he certainly assumes that a great deal of human cognition is built into us. He supposes not only that the world is the way it is and that things have the natures they have independent of human cognition, but also that human cognitive apparatus is natively so constructed that it will automatically cleave reality at these joints and cognize the natures of the things there are. That is, unlike metaphysical conventionalists, Aquinas supposes that the

cookie dough of reality comes pre-cut into particular kinds of things; and, unlike Kantians, Aquinas assumes that we all naturally recognize those very kinds of things with the natures they really have. None of us has to be taught to divide the world into the so-called natural kinds, for example – as distinct from dividing it into such conventionally ordered units as one consisting of the property of redness, the Republic of China, and Robert Dole's left foot. When Tom asks Hannah what she's looking at, he expects her to name something in the Aristotelian category of substance, or – failing that – something in some other one of the ten categories. Even if Hannah's answer were artistic or unconventional – "I'm looking at the reflection of the pattern of the clouds in the water of the puddle left by the rain" – he would still understand her remark in terms of substances, qualities, and relations among them. But if her answer were a conventionalist's melange, he would be blankly perplexed. In this regard, then, Aquinas's account of human cognitive apparatus is very plausible.

Aquinas calls the simple acts of cognition by which we recognize and categorize things in the world around us 'the cognition of non-complexes', that is, cognitive acts which are not propositional but whose objects are the quiddities of individual things. Such non-propositional apprehension he calls 'the first operation of the intellect', as distinct from the second operation of the intellect, which is what he calls 'compounding and dividing'.

Composition or division occurs when the intellect combines its first apprehensions or divides them to form affirmative or negative "complexes" or propositional judgments.[96] It also occurs when the intellect combines its first apprehensions even in a non-propositional way. When Hannah says, referring to the cat, "a big black one with a smudge on its nose", she is compounding even though she is not forming a proposition.

Aquinas also thinks that we have built into us even the cognition of certain complexes: "the first principles, whose cognition is innate in us, are similitudes of uncreated truth".[97] On his view, all human beings are hard-wired for a small set of first principles, such as the law of non-contradiction, for example. And he thinks that this fact about human beings requires supposing that human cognitive faculties are created by God. So, for example, in rejecting the Averroistic line that there must be only one agent intellect for all human beings, he says it must nonetheless be the case that all our intellects derive from the one separate intellect that is God, because all human beings share a common set of first principles. "In this way," he says, "the sharing by [all] human beings of the first intelligible [principles] proves the unity of the separate intellect [that is God]."[98]

Intellected intention and perception

When the intelligible *species* has been received by the potential intellect, we are at a point in the intellective cognitive process analogous to the point in

the process of sensory cognition when the sensible *species* has been received in a corporeal organ of the senses.[99] Like the sensible *species*, the intelligible *species* is not what is cognized; it is only the means of cognition. The intelligible *species* is also like the sensible *species* in being a form received spiritually or intentionally rather than naturally, so that it forms the intellect without turning the intellect into the thing that the form produces when it is received into matter naturally. And, finally, like the sensible *species*, the intelligible *species* is not part of conscious awareness. (Although the intellect can cognize the intelligible *species* by reflecting on its own acts, that sort of cognition is different from internal conscious awareness of the *species* themselves.) With regard to sensory cognition, conscious awareness of sensory data comes in at the level of the phantasms. The analogue in intellectual cognition to the phantasms is not the intelligible *species*, but something Aquinas calls the 'intellected intention'[100], 'concept' or 'internal word'.[101]

Although the abstracting of an intelligible *species* is the beginning or source of an act of intellection, that act of intellection is not complete until the intellect has used the intelligible *species* to form an intention. Thus Aquinas says:

> the intellect, informed by the *species* of a thing, forms in itself by an act of intellect a certain intention of the thing intellected; this intention is the nature (*ratio*) of the thing, which the definition signifies ... Since this intellected intention is as it were the terminus of an operation of the intellect, it is different from the intelligible *species* that actualizes the intellect; the intelligible *species* should be considered as the source (*principium*) of an operation of the intellect.[102]

The intellected intention is what finally allows the intellect to cognize an extramental thing:

> Because the intelligible *species*, which is a form of the intellect and the source for intellection, is a similitude of an external thing, it follows that the intellect forms an intention similar to that [extramental] thing ... And from the fact that the intellected intention is similar to an [extramental] thing, it follows that the intellect by forming an intention of this sort intellectively cognizes that thing.[103]

Aquinas explains in some detail what he means by 'intellected intention' in the course of his discussion of the generation of the second person of the Trinity. He says:

> It belongs to the nature (*ratio*) of an internal word, which is an intellected intention, that it proceeds from the person engaged in

> intellection in accordance with his intellection, since it is as it were a terminus of intellectual operation; for in the process of intellection the intellect conceives and forms an intellected intention or concept, which is the internal word.[104]

And elsewhere in the same chapter he says:

> By 'intellected intention' I mean that which the intellect conceives in itself with regard to the thing understood. In us ... this is a certain similitude conceived in the intellect with regard to the thing understood. It is what is signified by external words. Hence, this intention is also called an 'internal word' ... And that this intention is not in us the thing understood is manifest from the fact that intellectively cognizing a thing is different from intellectively cognizing the intellected intention, which the intellect does when it reflects on its own work.[105]

The intellected intention is thus a mental concept corresponding to a spoken word and enabling us to cognize intellectively an extramental thing.

The cognitive process leading to the first operation of the intellect

So to get to what Aquinas calls 'the first operation of intellect', namely, the intellect's apprehension of the quiddity or the properties of some extramental thing, we need not only an intelligible *species* informing the potential intellect, but also the intellect's forming an intention of this sort. The intention is the mental concept formed in cognizing an extramental thing, and its formation is the end of the complicated process of impression on the senses and phantasms and intellective abstraction.

When Tom says to Hannah, "What are you looking at?" and Hannah answers, "A cat", Hannah's answer is dependent on her having a first operation of intellect of this sort. As Aquinas sees it, the process Hannah undergoes to recognize the cat works like this. First, the form of the cat is received into the air as encoded information; or, as Aquinas puts 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 senses impress the sensible *species* 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 phantasms, extracting just the intelligible *species* from them, abstracting from individuating material conditions and leaving only information about universal

properties, beginning with the quiddity of the cat. The resulting intelligible *species* are received spiritually by the potential intellect. Actualized in this way by the intelligible *species*, the intellect engages in a further act, transforming the intelligible *species* into a mental concept, for example, the mental concept corresponding to the spoken word 'cat'. At that point, Hannah cognizes the cat as a cat.

Insofar as we think perceiving *as* to be requisite for perception, 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 four different stages, with four different subsystems operating at the different stages: the reception of sensible *species*; their processing into phantasms; the abstraction of intelligibile *species*; and their processing into intellected intentions.

That Aquinas 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 blindsight patient has sensible *species* but no phantasms. The visually agnosic patient has sensible *species*, phantasms, and intelligible *species*; he can use those intelligible *species* to recognize the cat by sound or by touch. But because he is visually agnosic, he cannot move from the intelligible *species* garnered from the visual sensible *species* to the intellected intention *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 don't know"; and if we ask him whether he sees a cat, he will answer, "no". Finally, in the case of certain neurological deficits, such as severe dementia, there may be fully functional sensory powers and even what Aquinas calls 'phantasia', without the patient's having any detectable intellectual functioning. Such a patient, for example, may track things of which she has conscious visual experience (as a blindsight patient cannot), without any indication that she comprehends the things happening around her or any sign of an ongoing inner mental life. In such a case, we seem to have the reception of sensible *species* and phantasms, but not intelligible *species* and their corresponding intentions.[106] Although Aquinas's account is complicated, then, its complication seems to reflect accurately the complexity of our cognitive processes as we currently understand them.[107]

Furthermore, Aquinas's way of thinking about the subsystems of our cognitive processing is not only tolerably accurate but also philosophically helpful. It is useful, for example, to think about the disability of an agnosia patient as an inability to extract the universal that is the quiddity from the mass of individuating characteristics presented to the senses. It gives us a helpful way to think about what at least many sorts of agnosia have in common and provides an insight into the nature of the deficit many agnosia patients have suffered. Consequently, this part of Aquinas's

account is useful for thinking about the subsystems of the mind. Aquinas's position also contains a reasonable and irenic response to contemporary controversies over whether all perception is always a matter of "seeing" as.[108] Ordinary perception on the part of normal adults, on Aquinas's view, will consist in two components, one simply of "seeing" and the other – the first operation of intellect – of "seeing" as. Since these are distinct processes, it is possible to have one without the other in cognitively defective human beings. Whether we want to continue to use the name 'perception' for the process when it is missing one or the other of these components then looks more like a terminological dispute than a real philosophical issue.

Universality and the cognition of particulars

The proper object of the intellect, as we have seen, is a quiddity or nature or essence, and this quiddity is a universal. Thus, Aquinas says, "the intellect sees the universal existing in a particular".[109] Apprehending universals in this way, as I said, is the first operation of the intellect. The second operation is the forming of propositions, which Aquinas calls the process of compounding and dividing:

> [the intellect] first apprehends something about a thing, namely, the quiddity of that thing, which is the first and proper object of the intellect. Then it understands properties and accidents and relationships accompanying the essence of the thing, in accordance with which (*secundum hoc*) it must compound and divide one apprehended object from another. Then it must proceed from one composition and division to another, and this is reasoning.[110]

(Reasoning, the weaving together of complexes, is the last kind of operation of the intellect. When Hannah thinks about the best way to keep the cat out of her bird feeders, she is engaged in what Aquinas sometimes calls the third operation of the intellect, discursive reasoning.[111])

Besides the quiddity of an extramental thing, then, the intellect also cognizes the other properties of that thing, including its relationships. But all these properties are universals, and so what the intellect apprehends is universals.

This claim may appear peculiar, but its rightness can be seen by returning to the homely example with which I began. Suppose that Tom not only cannot see what Hannah is looking at outside the window; suppose that Tom has in fact been temporarily deprived of the use of all his senses but that Hannah, by some magic or futuristic neurobiological technology, can communicate her thoughts to him – her thoughts, but not her sensings or any of her sensory experiences. Suppose that Tom does not know Max the cat

by acquaintance, and that Hannah is trying to describe Max for Tom. In answer to the question, "What are you looking at?", Hannah replies, "A cat." Here Hannah is reporting the first operation of the intellect, which has apprehended the quiddity in a material particular.[112] Then she reports on various accidents and relationships of the cat; she indicates the cat's size, coloration, and relationships to birds: a big black and white cat, stalking birds. All these features of the cat are universals, too.[113]

In fact, no matter how detailed or meticulous Hannah's observations are, anything she reports to Tom will still consist just in universals of this sort. The only way to cognize this very cat, this particular, is to begin by using the senses and pointing, metaphorically or literally, to the individual picked out by the senses, as Hannah does when she says, "That's Max!". And unless Tom, too, can make epistemic contact through his senses with Max, Tom will be restricted to cognizing the universals exemplified by Max, without being able to cognize the individual cat, Max.[114]

For reasons of this sort, Aquinas says:

> Our intellect is not able to cognize directly and primarily the individual among material things. The reason for this is that the principle of individuality in material things is the individual matter. But our intellect ... understands by abstracting the intelligible *species* from matter of this sort. Now what is abstracted from individual matter is a universal. And so our intellect is directly cognizant only of universals. It can cognize singulars indirectly and by means of a certain reflection.[115]

For a human person to cognize a particular, the intellect has to turn to the phantasms and so is dependent on the senses. Aquinas makes the point with an example about the cognition of flesh. There are two different ways in which the cognition of flesh occurs, he says:

> [It happens] in one way, [when] either the flesh itself and the quiddity of flesh are cognized by powers entirely different from one another. So, for example, the quiddity of flesh is cognized by the intellective power, and the flesh is cognized by the sensitive power. And this happens when the soul cognizes a singular by itself and the nature of a *species* by itself. [But] it happens in another way that the flesh is cognized, and the quiddity of the flesh – not that there are different powers; rather the same power cognizes both flesh and the quiddity of flesh, but in different ways. And this must be the case since the soul relates a universal to a particular ... And so the intellect cognizes both, but in different ways. For it cognizes the nature of a *species*, or a quiddity, by directly extending itself; it cognizes a singular, however, by a certain reflection, insofar as it

> returns to (*redit super*) the phantasms, from which it abstracted the intelligible *species*.[116]

In returning to the phantasms and connecting a concept with a phantasm, the intellect anchors the concept, as it were, to a particular extramental thing. This is what Hannah does when she has sensory cognition of the cat – a process just involving sensory powers and phantasia – and also sees it as a cat – a process that involves intellect's apprehending the quiddity. The intellect's abstractive processing allows Hannah to see *as*, rather than just seeing. But the phantasms anchor that seeing *as* to this particular thing seen. So Aquinas says, "the potential intellect receives forms as actually intelligible because of the power of the agent intellect. But it receives them as similitudes of determinate things because of the cognition of phantasms."[117]

Hence, Aquinas says:

> Every [act of] cognition is in accordance with some form, which is the source of cognition in the one cognizing. But a form of this sort can be considered in two ways: in one way, in accordance with the being it has in the cognizer; in another way, in accordance with the relationship (*respectum*) it has to the [extramental] thing of which it is the similitude. In the first way, it causes the cognizer actually to cognize. In the second way, it determines the cognition to some determinate cognizable thing.[118]

In fact, according to Aquinas,

> a similitude existing in a cognitive power is not a source of the cognition of an [extramental] thing in accordance with the being which the similitude has in the cognitive power, but in accordance with the relationship which the similitude has to the cognized thing. And for this reason an [extramental] thing is cognized not by means of the mode in which the similitude has being in the one cognizing, but rather by means of the mode in which the similitude existing in the intellect is representative of that thing.[119]

Cognition of particulars and direct cognition

At this point, we might suppose that even if Aquinas's position is understandable, it is nonetheless worrisome. It is, we might think, bad enough epistemic news that human cognition is mediated first by sensible *species* and phantasms, and then by intelligible *species*, which are produced not by a causal chain extending from an extramental object to the intellect but rather by the action of the agent intellect on the phantasms. Now we are told that the entire, highly mediated process results only in indirect cognition of

singular material objects. Furthermore, my interpretation of Aquinas here apparently belies the claim with which I began, namely, that for Aquinas human beings have direct cognition of extramental reality.

The appropriate response to this worry, as to many other worries with regard to various parts of Aquinas's thought, depends on remembering that Aquinas is no friend of reductionism of any kind. In this case, it requires recognizing the mistake in reducing a whole to its parts, the human knower to the subsystems that make up the mind.[120] Anyone (medieval or contemporary) interested in the mechanism of cognition will tend to analyze the mind into its components, the faculties or "modules" comprising it, and the processes of those components. There is a consequent temptation to associate cognition with the activity of just one of the components. The perplexity and unease generated by Aquinas's claim that the intellect knows individuals only indirectly stem from unreflectively equating Aquinas's account about what the intellect cognizes with his view of what a human person cognizes. But this is a mistake. An intellect is not identical with a human person, and the knower is the human person, not the intellect alone.

In other words, for Aquinas, cognition is a systems feature; it is to be ascribed to the whole human being, and not to one of her components, not even to the fanciest component, the intellect.

We are not likely to make a mistake of this sort when it comes to the senses. From the claim that hearing perceives what is white only accidentally, insofar as the thing that it hears is a white thing, we are not likely to suppose Aquinas thinks that human beings perceive white things only accidentally. But it is easier to fall into this mistake when it comes to claims about the intellect. When Aquinas says that the intellect perceives particulars only indirectly, we can become confused and form the mistaken notion that on his account human beings have only indirect cognition of material reality. But from the fact that one component of the cognitive apparatus perceives something indirectly, it does not follow that the cognizer herself perceives only indirectly in such cases. And so, as a general principle regarding the entire complex process of cognition, Aquinas holds that "to cognize things by means of their similitudes existing in the cognizer is to cognize them in themselves or in their own natures".[121]

Cognition as assimilation

We are now in a position to understand Aquinas's frequently repeated, frequently cited notion that "all cognition arises from the assimilation of the cognizer to the thing cognized",[122] that "the intellect in act *is* the thing understood in act",[123] so that "the soul is all things".[124]

This notion is often put forward in startling formulations. Speaking of the equivalent idea in Aristotle, Joseph Owens, for example, says,

> you *are* the things perceived or known. Knower and thing known ... become one and the same in the actuality of cognition. From the strictly epistemological standpoint, this thoroughgoing identity of knower and thing known is the most important and most fundamental tenet in the Aristotelian conception of knowledge. Yet it is the tenet that evokes the hardest sales resistance in students, and is the last Aristotelian dictum to which they come to assent ... They do not like the idea of being a brown cow or a big bad wolf just because they are seeing those animals or thinking about them.[125]

When the idea is put in this way, it is hard not to sympathize with the sales-resistant students.

Putting the idea in this way gives rise to a host of perplexing questions, in addition to the counter-intuitiveness of the very idea troubling the student who is resistant to the claim that she is a wolf because she is thinking of a wolf. If it is the unity of the intellect and the thing known which produces cognition, why does the thing known not also become the intellect in the process of cognition? That is, why does the wolf not become a human intellect in the unity of the intellect and the thing known? Or to raise the epistemological correlate of this metaphysical question, if cognition is produced by unity between the wolf and the intellect, why is it the case that the intellect knows the wolf, but the wolf does not know the intellect? Why is cognition asymmetrical when it is produced by being one with, which is symmetrical? As far as that goes, why should unity be thought to be productive of cognition at all? When one thing is produced from two inanimate things, as, for example, when hydrogen and oxygen are combined into one substance, water, no cognition results. And even when at least one of the things involved in the union is endowed with intellect, it is not the case that just any union involving such a thing will produce cognition. If the wicked witch had turned Hansel into one of the decorations on her candy house, Hansel would have been united with the house (or at least with the house decoration), but we would not expect the witch's action to be enabling Hansel to cognize the house (or, for that matter, to be enabling the house to cognize Hansel).

Most but not all of these difficulties are artifacts of the startling formulation Owens gives the Aristotelian idea. The idea itself, at least in Aquinas's understanding of it, is significantly tamer and more sensible than such a formulation suggests. Aquinas thinks cognition is a kind of assimilation because he thinks that there is a similitude of the thing cognized in the cognizer. As we have seen, a similitude is a matter of sharing forms, and forms can be shared in a variety of ways. The cognizer is the thing cognized only in the sense that they share a form in one of these ways.

Furthermore, the sort of sharing at issue does not yield the symmetrical relationship that talk of unity between cognizer and cognized suggests;

rather, it is, sensibly enough, an asymmetrical relationship in which the form of the thing cognized is in the cognizer, but it is not the case that the form of the cognizer is in the thing cognized. In addition, the way in which the form of the thing cognized is in the cognizer is very far from making the cognizer *be* the thing cognized in any literal sense at all. In the mode in which the form is in the thing cognized, the form makes that thing what it is – a wolf, say. But in the mode in which the form is in the thing cognized, spiritually or intentionally, as encoded information, it does not make the cognizer be a wolf. Although when it is in the cognizer, it is the same form as the form in the wolf, the difference of mode makes it the case that the cognizer does not literally turn into a wolf when cognizing one.

So when Aquinas says that the intellect is all things, he is speaking in the same frame of mind we are in when we say, for example, "It won't be long before all our reference books will be on CD-readers." One can imagine some future historian laboring to explain this remark to students, who are wondering how a previous age could possibly have supposed that all those bulky books could be shoved through the little slot in the CD-reader. The intellect is all things in the sense that it can receive the forms of all things in a suitably encoded mode. Precisely because the intellect receives forms in an intentional or encoded fashion, the reception of those forms produces cognition in the intellect, though the same form received with natural reception in the thing cognized does not produce cognition in it.

What is required for cognition is thus some sort of representation. The original "presentation" of the form of the wolf in matter produces the wolf; the *re*-presentation of that form in the intellect produces cognition of the wolf.

Conclusion

We may still wonder why the intellect's representation of the forms of things outside the mind should produce cognition of those things. This is a question which can be taken in two ways. In asking it, we might want an explanation of this complex process's producing *cognition*, rather than simply producing non-cognitive causal effects in our cognitive apparatus. Alternatively, we might be looking for an explanation of this process's producing apprehensions and judgments in us that correspond reliably with the way the world really is.

We ourselves might be inclined to answer the second question by claiming that the reliability of our cognitive processes is a result of the way in which evolution has shaped our brains.[126] As I explain further in the chapter on the foundations of knowledge, Aquinas thinks that our cognitive processes are reliable because they are the products of our cognitive faculties, which were designed by a good God, who intended us to resemble him in being cognizers. So the answer to this question will be a function of the

general worldview of the person who answers it, and there are different sorts of respectably reasonable answers corresponding to these different worldviews.

But when it comes to the first question, why the form of the thing cognized received in the cognizer with spiritual reception should produce cognition, that is, why this particular set of processes should enable *cognition* to occur at all, I do not think that Aquinas's account has any good answer. This admission, however, should not be surprising. From Aquinas's point of view, the question is asking not whether God can be trusted to make our cognitive apparatus reliable, but rather how exactly the faculty produced by God manages to do the job of cognizing extramental things. The secular analogue to this query is the great question of contemporary neurobiology: what are the mechanisms that allow human beings to be conscious of the world around them? At present, we are not even agreed on the right methods for pursuing data that would count as evidence pertinent to this question.[127] As far as I know, no scientist or philosopher yet has been successful in finding an answer to it, in either its scientific or its philosophical form. So it is hardly surprising that Aquinas's account does not contain a good answer to it either.

Finally, although I have looked at Aquinas's theory of human cognition in some detail, I have by no means given an exhaustive account of it. A very important part of what is missing has to do with Aquinas's views of the relation between intellect and will in intellectual virtue and vice. I will return to consider this part of his theory in a later chapter.[128]

9

FREEDOM

Action, intellect and will

Introduction

For more than one reason, it is not easy to develop a comprehensive and satisfactory account of Aquinas's views of the nature of human freedom.

To begin with, most contemporary discussions of free will tend to belong to what is in fact a non-Thomistic tradition of thought about the topic.[1] In this tradition, human freedom ultimately is or depends on a property of just one component of human mental faculties, the will; and freedom most fundamentally consists in the will's ability to act autonomously in general and independently of the intellect in particular. This tradition has such a grip on the contemporary discussion, both for libertarians[2] and for their opponents, that Aquinas's account tends to be interpreted by its lights. As a result, the lineaments of the theory Aquinas holds are obscured. For Aquinas, as we will see, freedom with regard to willing is a property primarily of a human being, not of some particular component of a human being. Furthermore, the will is not independent of the intellect. On the contrary, the dynamic interactions of intellect and will yield freedom as an emergent property or a systems-level feature.[3]

Second, Aquinas gives a complicated analysis of the several acts of will associated with any free action of a person. Scholars sometimes pick out a subset of these acts or even just one of them as if for Aquinas freedom were lodged in that sort of act of will alone. So, for example, it is sometimes said that Aquinas has a particularly full treatment of free will in *De malo* 6 because in that text he discusses at length *liberum arbitrium*.[4] But, as we shall see, *liberum arbitrium* is not equivalent to free will in our sense,[5] and volitions characterized by *liberum arbitrium* are associated for Aquinas with only one sort of free act of will, namely, the sort he calls *electio*. *De malo* 6 is therefore not about freedom of the will as a whole but only about one of the acts of will, namely, *electio*, in which such freedom is exemplified. (In order to avoid confusion, I will leave both '*liberum arbitrium*' and '*electio*' untranslated here and let their meanings emerge from a consideration of Aquinas's use of them.)

For these reasons, as well as others, in order to understand Aquinas's views of human freedom, I will focus first on his account of the nature of intellect and will, the interactions between them, and the emergence of freedom from their interaction. Then I will discuss the kind of acts of will Aquinas associates with a free action of a person, such as voluntarily raising one's arm. With that background, I will look in detail at Aquinas's theory of freedom, in particular at his views of human ability to do otherwise and the relation of that ability to freedom. Finally, I will consider what answer can be given to a taxonomic question: Is Aquinas's theory a compatibilitist account, as is sometimes claimed, or is it a species of libertarianism?

Classifying Aquinas's theory of freedom is complicated because of his views of divine grace and the effect of grace on the will, and it is true in a sense that we cannot be entirely clear about Aquinas's theory of freedom without also understanding his account of grace.[6] But Aquinas's account of grace is a large subject, which cannot be treated in passing in this chapter. (In a subsequent chapter on grace and free will, I will say something about the way in which grace can work on the will without undermining its freedom, on Aquinas's views.)

Intellect and will

Contemporary philosophers tend to operate with a conception of the will as the mind's steering wheel, neutral in its own right but able to direct other parts of the person. Aquinas's conception of the will is different. He takes the will to be not a neutral faculty, but a bent or inclination. The will, he says, is a hunger, an appetite, for goodness.[7] By 'goodness' in this connection Aquinas means goodness in general, not this or that specific good thing; that is, the will is an inclination for what is good, where the phrase 'what is good' is used attributively and not referentially.[8]

By itself the will makes no determinations of goodness; apprehending or judging things as good is the business of the intellect. The intellect presents to the will as good certain things or actions under certain descriptions in particular circumstances, and the will wills them because it is an appetite for the good and they are presented to it as good. For this reason the intellect is said to move the will not as an efficient cause but as a final cause, because its presenting something as good moves the will as an end moves an appetite.[9] This is one reason for calling the will a 'moved mover' (as Aquinas notes that Aristotle does), because, in moving what is under its control, the will is moved by an object intellectively apprehended as good, or an "intellectively cognized appetible",[10] as Aquinas puts it.

Understood in this way, the will can be seen as part of a larger scheme. Because all things are created by a good God who wills what is good for his creatures, all things are created with an inclination of their own to the good, but of very different sorts. Some, like plants or even inanimate things, have a

built-in inclination to the good apart from any cognition of the good. Aquinas sometimes calls this inclination 'a natural appetite'. The sort of thing Aquinas has in mind here is exemplified by, for example, plants naturally turning towards sunlight. Higher up the ladder of being are animals of certain sorts which are naturally inclined to the good but with some (sensory) cognition.[11] They can cognize particular goods, although they lack the ability to reflect on them or to think of them as good. Inclination dependent on limited cognition of this sort Aquinas calls 'sensory appetite'. Higher still on the ladder of being are human beings whose inclination to the good is dependent on intellect, which allows them not only to cognize particular goods but to think about them reflectively as good. Aquinas calls this inclination 'rational appetite', and it is what Aquinas takes the will to be.[12] So close is the association between intellect and will for Aquinas that he often speaks of the will as being in the intellect,[13] and he thinks that anything which has intellect must also have will.[14]

Understood as rational appetite, the will is the primary mover of all the powers of the soul (including itself) except the nutritive powers,[15] and it is also the efficient cause of motion in the body.[16] Most important for our purposes, the will exercises some degree of efficient causality over the intellect. In some circumstances, it can command the intellect directly to adopt or to reject a particular belief.[17] It can also move the intellect by directing it to attend to some things and to neglect others,[18] or even to stop thinking about something altogether. So, for example, while you are reading a magazine, you come across some organization's advertisement asking for money for children, with an emotionally powerful picture of a starving child. Your intellect recognizes that if you look at the advertisement for very long, you are likely to succumb to its emotional force. Intellect sees the goodness of contributing to the organization, but it also recognizes that if you give money to this organization, you will not have it for the new computer you have been coveting. Your desire for the new computer is strong and influences intellect to rank saving money for the computer as the best for you now in the circumstances in which you are. In consequence of the findings on the part of the intellect, and with this influence from the passions, the will directs the intellect to stop thinking about the advertisement and the organization, and (after a further interaction of intellect and will) you turn the page of your magazine.[19]

As this example shows, in addition to the will's control over the intellect, the passions – sorrow, fury, fear, etc. – can also influence the intellect, because in the grip of such a passion, something will seem good to a person which might not seem good to her otherwise.[20] The intellect, however, typically is not compelled by the passions in any way;[21] it can resist them, for example, by being aware of the passion and correcting for its effects on judgment, as one does when one leaves a letter written in anger until the next morning rather than mailing it right away. Furthermore, the passions are

themselves theoretically subject to the will. In other animals, Aquinas says, motion follows directly from the sensitive appetite's positive or negative reaction. In human beings, however, the sensitive appetite awaits the command of the will, which is the superior appetite. The lower, sensitive appetite, Aquinas thinks, is not by itself sufficient to cause movement in other powers unless the higher appetite, the will, commands that movement.[22] That is why, for example, human beings can go on hunger strikes and stay on them to the point of starvation.

I raise the subject of the relation of the passions to intellect and will, however, only to put it to one side. Although Aquinas has many interesting things to say about the moral psychology of the passions, his complicated account of the intellect and the will and the freedom that emerges from their interaction is more than enough for the focus of this chapter. I will therefore introduce the passions into the discussion only when it is necessary to do so in order to understand what Aquinas has to say about the intellect and the will.

Just as the will can affect the intellect in various ways, so the intellect can move the will in more than one way. The will can be moved to will as distinct from not willing – this is the "exercise" of its act. Or it can be moved to will this rather than that particular thing – this is the "specification" of its act.[23]

There is nothing in this life that invariably and ineluctably moves the will to the exercise of its act, because it is always in a person's power to refuse to think about whatever is at issue and consequently to refrain from willing it.[24] Since the will wills something only in case the intellect presents it as some sort of good, the fact that the will can command the intellect to stop thinking about something means that the will can, indirectly, turn itself off, at least with regard to a particular action or issue. This is only a limited ability on the part of the will, however, since the apprehensions of the intellect can occur without any preceding act of will and so in some cases may force the issue back on the agent's attention. That is why, for example, the prisoner who wants not to think about what is happening in the next cell where other prisoners are being tortured will find that their screams make him recur to what he wants to stop thinking about.[25]

As far as the specification of the will's act is concerned, there is no object, other than happiness in this life and God in the next, which by its nature necessarily moves the will to want *that*.[26] Because God has created the will as a hunger for the good, the will by nature desires the good. And whatever is good to such a degree and in such a way that a person cannot help but see it as good, the will of that person wills by natural necessity. One's own happiness is of this sort,[27] and so a person necessarily wills happiness.[28] But even things which have a necessary connection to happiness are not willed necessarily unless the willer is cognizant of their necessary connection to happiness.[29] Except for happiness and those things so obviously connected

with happiness that their connection is overwhelming and indubitable for a person, the will is not in general determined to one thing because of its relation to the intellect.

On Aquinas's account, the will wills only what the intellect presents at that time as good under some description. Acts of will, then, are for something apprehended or cognized as good at a particular time in particular circumstances, as distinct from something which is good considered unconditionally or abstractly. Besides happiness and the vision of God, all other things are such that they can in principle be considered good under some descriptions and not good under others, so that there is nothing about them which must constrain the will of any agent always to want them. So, for example, the further acquisition of money can be considered good under some descriptions in some circumstances – e.g., the means of sending the children to school – and not good under others – e.g., wages from an immoral and disgusting job.

Finally, the will can move itself in more than one way. It can move itself indirectly by commanding intellect to stop thinking about something, as in the example above. It can also move itself indirectly because in virtue of willing a certain end it moves itself to will the means to that end. That is, the will wills a certain means because it wills a particular end and because intellect presents that means as necessary, or the best in the circumstances, for attaining that end.

But a more direct control over itself is possible for the will, too. All the higher powers of the soul, Aquinas holds, are able to act on themselves.[30] So, for example, the intellect is able to cognize itself.[31] By the same token, the will can will to will. In fact, Aquinas confronts a problem that has troubled some contemporary hierarchical accounts of the will, namely, that there may be an infinite regress of higher-order willings. I can will that I will something, and I can also will that I will that I will something, and so on, apparently *ad infinitum*. Aquinas thinks, however, that in such an apparently infinite series, the will is not actually taking ever-higher orders of volition as its object. At some point, Aquinas thinks,[32] the apparently higher-order volitions collapse, and the object of the will is just whatever action was at issue at the beginning of the series of volitions.[33]

If the intellect does present something to the will as good, then, because the will is an appetite for the good, the will wills it – unless the will directs intellect to reconsider, to direct its attention to something else, or to stop considering the matter at hand. The will's doing this is, of course, a result of the intellect's presenting such actions on the part of the will as good, and such an act on the part of the intellect may itself be a result of previous acts on the part of the will directing the attention of the intellect.

One worry which arises here is that Aquinas's account commits him to an infinite regress of interactions between the intellect and the will, so that there is never a beginning for any action. How troublesome this worry

appears depends in part on whether we start with some action an agent is doing and work backwards to ask why he did it, or whether we try to begin with something that in fact initiates an action.

So, for example, suppose you get up to answer the telephone when it rings, and we want to know why you did so. Then you might give some account of yourself, explaining why it seemed reasonable for you, rather than for your teenaged daughter, to get the phone. You might say, for example, that on this occasion your daughter had finally begun her piano practicing and you did not think she should be distracted. But now we might want to know why these considerations were effective with you. We might ask why you have this attitude towards your daughter's piano practicing, and you will find yourself giving some further explanation for this attitude on your part. And so on, in a process that looks as if it will never stop.

But suppose that instead of starting with the action of answering the telephone and working backwards in this way, we instead start with what in fact initiates the action. You are busily engaged trying to get the dirt and mildew out of the old camping equipment when the phone rings and you wish someone would answer it. A second's reflection, only half-consciously made, persuades you that, however inconvenient it is to drop the camping gear, you ought to get the phone yourself; and, with one degree of reluctance or another, you assent to doing so and move for the phone. Here there is no question of infinite regress. The action was started by your hearing and recognizing the ringing of the phone.

Thinking of your action in this way helps explain Aquinas's own reason for rejecting the worry about an infinite regress of this sort. Every act of willing, he thinks, is preceded by some apprehension on the part of the intellect, but not every apprehension on the part of the intellect need be preceded by an act of will,[34] so there is no danger of an infinite regress. Nonetheless, that the specter of an infinite regress is raised by beginning with an action and working backwards through successive sets of interactive cognitive and conative attitudes is an indication of the dynamic nature of the interaction between intellect and will. Any particular act on the part of intellect or will may be influenced by a whole array of preceding acts of intellect and will. That's why our past actions mold our character, and our character in turn shapes our actions.

It is apparent, then, that on Aquinas's account of intellect and will, the will is part of a dynamic feedback system composed primarily of the will and the intellect, but also including the passions. The interaction between will and intellect is so close and the acts of the two powers are so intertwined that Aquinas often finds it difficult to draw the line between them. So, for example, he says:

> it happens sometimes that there is an act of the will in which something of the [preceding] act of reason remains ... and, vice versa, there is [sometimes] an act of reason in which something of the [preceding] act of will remains.[35]

That is why, for Aquinas, it sometimes *looks* as if (even if it is not in fact the case that) the will engages in acts of apprehension and the intellect engages in acts of willing.

If we remember this part of Aquinas's account and also take seriously his identification of the will as a hunger or appetite, we will be less likely to make a mistake and identify the will on his account as nothing more than a toggle switch with three positions: accept, reject, and off. Aquinas's account of the will is more complicated than such an identification implies. Because it is an appetite, the will can have dispositions, so that it can be more or less readily inclined to want something. It can will something with more or less strength.[36] It can give specific commands to body parts. Finally, under the pull of the passions, it can influence what intellect presents to it as good by selectively directing the attention of the intellect.

For this reason, too, although Aquinas's account of the will assigns a large role to intellect, he is not committed to seeing immoral actions simply as instances of mistakes in deliberation, since the intellect's deliberations are in many cases dependent on the will's influence. In cases of incontinence, where the intellect seems to be representing something as good which the will is not willing, Aquinas would say that the intellect, influenced by the will, is in fact being moved by opposed desires to represent the thing in question as both good (under one description) and not good (under a different description), so that the intellect is double-minded.[37] In the last analysis, what the intellect of the incontinent person represents as the best alternative in these circumstances at this time is not that which the agent takes to be good considered unconditionally or in the abstract.

Cases of incontinence illustrate the further complicating fact that the intellect need not present one simple, unified result to the will. Sometimes an agent is, as we say, entirely of one mind about something, and what the intellect presents to the will is one unified message that something is good now under this description in these circumstances. But what is no doubt also often the case is that an agent's intellect is not entirely unified. The doctor has recommended x-raying the agent's head to check for a sinus infection. On the one hand, the agent's intellect may recognize that the doctor is an expert in her field, so that her advice should be followed for that reason. On the other hand, however, the agent's intellect may be aware that even low-level x-rays are carcinogenic, and the intellect may raise a question about whether the doctor's ordering the x-ray reflects her concern to avoid malpractice law suits rather than her own view about what is necessary for the health of her patient. Furthermore, the influence of the passions may also complicate the case. It might be, for example, that a patient's intellect supposes some medical tests are in fact medically required, but his passions

might recoil strongly from the tests, for one reason or another. In that case, his aversion to the tests may influence the intellect to give a divided verdict: on the one hand, it would be good to undergo the tests, because they are important for health; on the other hand, it would be bad to undergo the tests because they are fearful, painful, or otherwise repulsive. In such cases, there may be considerable interaction among intellect, will, and passions, until, in consequence of such iterated interaction, one side or another of the divided intellect becomes strong enough to override the other. This is a process familiar enough to anyone who has had to talk himself into doing something he originally feared or disliked. (I will say more about such iterated interactions involving the will in later sections of this chapter.)

The relation of freedom to intellect and will

One of the perplexing things about the preceding analysis of the relation of intellect to will is that it is not immediately apparent in what sense the will is free.

It is helpful in this connection to notice that Aquinas recognizes a distinction between freedom of action and freedom of willing.[38] He acknowledges, for example, that we can lose our freedom of action while retaining our freedom with regard to willing. Even when the will itself is not compelled or coerced in any way, he says, the members of the body can be impeded by some external cause so that they do not follow the command of the will.[39] While an agent might still be free with regard to his willing in such a case, he would not be free with regard to his actions, which in the case envisaged are at least in part under some control other than his own. In order for an agent to have freedom of action, then, it is not sufficient that his will be free in its willing of that action. It must at least also be the case that there is no external impediment to the action of the relevant body parts and that those parts are themselves functioning normally.

Consequently, freedom of action is not a property of just one component of a human being. Rather, it is a property of a whole system, the system comprised at least of the will and the members of the body. It emerges when the will is freely commanding a certain sort of movement and when the relevant bodily parts are functioning normally and are not kept by any cause external to the agent from being under the will's control. It is even more helpful to see that for Aquinas, freedom with regard to willing is also a feature of a whole system.

In explaining what constitutes a distinctly human action, Aquinas frames his explanation this way. What differentiates human beings from non-rational animals is that a human being is master of his acts, in virtue of having intellect and will. Consequently, no freedom with regard to willing remains for a person who, through madness, for example, has lost the use of

his intellectual faculties.[40] Aquinas makes the same point another way by saying that the root of freedom is in the will as subject but in the reason as the cause.[41] That is, the property of freedom inheres in the will, which is the subject for the property, but it does so because of the intellect; the will's relations to and interactions with the intellect are the source of the freedom in the will. Freedom with regard to willing, then, is not a characteristic either of the will or of the intellect alone. Like freedom of action, freedom with regard to willing emerges from the functioning of a system, in this case the system comprised of the intellect and the will.

Furthermore, Aquinas also says that an agent is master of his acts or has his acts in his own power insofar as they are voluntary, and that it is a person's voluntary acts which make him subject to praise or blame.[42] But, in his view, whatever is voluntary requires an act of the intellect as well as an act of the will.[43] Seconding a view of Damascene's, Aquinas calls a voluntary act 'an act that is a rational operation'.[44] In fact, Aquinas holds that because the will has the relation it has to the intellect, all the acts of the will are voluntary, whether they are simple acts of will or are commands to some other power which the will controls.[45] Finally, in Aquinas's view, anything that takes away an agent's use of her intellectual faculties also takes away the voluntariness of her action.[46]

For Aquinas, a voluntary act is a special case of being moved by an intrinsic principle.[47] Whatever is moved by an intrinsic principle in such a way that it acts for an end which it cognizes as an end has within itself the principle of its action. Some creatures act with a limited cognition of the end for which they are acting, so that their acts are voluntary but in a limited sort of way. The acts of young children and some animals are voluntary in this way. Normal adult human beings, on the other hand, can have a full cognition of their ends, and so they can have complete voluntariness with regard to their acts.[48]

By the same token, and perhaps as a consequence of the same thought about the voluntary, Aquinas thinks that anything external to the agent which acted coercively on the agent's will would thereby destroy voluntariness. That the voluntary movement of the will be from an extrinsic principle, Aquinas says, is impossible.[49] This is not an empirical claim but a conceptual one. For something to be an act of will, it has to stem from an intrinsic source, in particular the will as informed by the intellect. So, Aquinas says, "an act of the will is nothing other than an inclination which proceeds from an interior cognizing principle ... but what is compelled or violent is from an extrinsic principle".[50]

If something extrinsic to the agent were to act on the will with efficient causation, then the tie of the will to the intellect, from which acts of will get their voluntary character, would be broken, and so the act of the will would not be voluntary – or to put it more nearly as Aquinas seems to think of it, in such a case it would not be a real act of the will at all.

We might wonder here why Aquinas would not grant that an act of will could be voluntary even if it were caused by an extrinsic principle, provided that the extrinsic principle produced its effects by operating directly on the agent's intellect and only thereby, indirectly, on the agent's will. Aquinas considers something like this question himself when he asks whether Satan could bring it about that a human being sin.[51] Aquinas subscribes to the demon-possession theory of mental illness, so he supposes that Satan can causally affect a human intellect by possessing it. But, in his view, this is to destroy it as a human intellect; an insane person has lost his reason. At any rate, if some external agent S has taken over entirely the intellect of some human being H, then the intellect that is operative in that human person is S's and not H's. In that case, what the will operative in H wills might be voluntary, but it would count as S's will, not H's, since the intellect that informs the willing is S's. In this case, there can be an extrinsic principle S which operates on the intellect of some other agent H, but the operation of the extrinsic principle will not give us an act of will that can count as H's. On the other hand, if we were to imagine Satan (or his twentieth-century counterpart, the evil neurosurgeon) invading H's intellect only partially, for example, by producing a thought or a train of thoughts, H's intellect will then examine that thought or set of thoughts and evaluate it, retaining or rejecting it according as it seems right to H to do so. In that case, however, any resulting voluntary acts of will stem from the reflections of H's intellect, not S's. Here again, then, we will not have a case in which a voluntary act of will on H's part is produced by an extrinsic principle S, operating through H's intellect.

So, worries about grace aside, it is clear that Aquinas is not a compatibilist. The causal chain resulting in any voluntary act on an agent's part has to originate in the agent's own intellect and will. If it originates in some cause external to the agent, the resulting act either will not be an act of the agent's will – as in the case of demon possession – or will not be an act of will at all. So while extrinsic principles may influence human volition, as, for example, we sometimes do when we persuade one another by arguments, causes external to an agent H cannot efficiently cause a voluntary act of will on H's part, either directly or indirectly.

If Aquinas is not a compatibilist, what sort of incompatibilist is he? Is he a libertarian? Although the outlines of Aquinas's theory of human freedom are now somewhat clearer, it still is not obvious in what sense the will – or the system of will and intellect – is supposed to be free. No doubt, part of what gives rise to this perplexity is the presupposition, common enough in contemporary discussions of free will, that libertarian free will includes or even just consists in the ability to do otherwise.[52] But in what sense is it possible for the will, or the will-and-intellect, to do otherwise on Aquinas's view?

To answer this question and to sort out the associated puzzle about libertarian free will, it is helpful to explicate Aquinas's account of *liberum arbitrium*, because it is often taken to constitute his theory of free will. That account, however, is inextricably linked to Aquinas's theory of action. Consequently, we will best approach our question regarding Aquinas's account of the will's ability to do otherwise not by attacking it head on but by proceeding obliquely, beginning with Aquinas's account of the nature of a full-blown human action[53] – one over which the agent is master, over which the agent has control, and for which the agent is subject to praise or blame.

Human action

Contemporary accounts, however they present the details, are likely to explain an action, such as raising one's hand, in terms of an agent's beliefs and desires, which combine to yield this action. By contrast, Aquinas's account of such an action explains it in terms of a much more structured and dynamic process.[54] Because it is complicated, I will first simply present it, reserving reflection on it till after the whole account has been sketched out.

The process which eventuates in the bodily motion of a human action begins, on Aquinas's view, with the intellect's cognition of the circumstances in which the agent finds herself and its judgment about what would be good, under some description, in these particular circumstances at this particular time. This judgment moves the will to a first act, a simple volition of an end. This judgment and its accompanying volition is the first of five sets of paired acts on the part of intellect and will. The next three sets all have to do with the means to the end considered and desired in this first judgment and volition.

Although the initial volition of the end is prior in explanatory order to the other acts of will in the sequence, it need not be separated by much or even any time from them:

> sometimes [the volition of the end] is temporally prior, as when someone first wants health and then afterwards, deliberating about how he can be restored to health, wills to send for a doctor in order to be made healthy.[55]

Because the intellect might in one act cognize both end and means, however, the willing of the end and of the means might also occur at once, as they would if the patient in Aquinas's example were simultaneously to wish to be healthy and to will on that account to send for the doctor.[56]

The second act of the will in the paired acts of intellect and will leading to voluntary bodily movement is the first of three acts of will associated with the means to the end wanted. This act of will is intention. Unlike the simple volition of the end, intention is an act of will which is related to the

end but only as it can be achieved by certain means the agent believes are available to her. So Aquinas says, there is simple volition "by which we wish absolutely to have health", and then there is intention: "for when we are said to intend to have health, it is not just because we wish for it but because we want to achieve it by certain means".[57] Intention is therefore also dependent on a preceding act of intellect, namely, one which supposes that the end wanted can be achieved by the very person wishing for it, that achieving the end is now within the agent's power.

Aquinas distinguishes intention from another act of will related to means, third in the series of paired acts, namely, consent. Consent is the will's accepting the means the intellect proposes as suitable and efficacious for bringing about the end wanted. Intention is the act of will that follows the intellect's judgment that the agent is able to bring about the end at issue. Consent is the act of will that follows the intellect's judgment of the ways in which the agent can bring this about.[58]

Consent is thus also preceded by an act of intellect, which Aquinas calls 'counsel', in which the intellect determines means suitable for achieving the end wished for. If the intellect takes there to be several suitable means for reaching the end, the will may consent to all of them. So, for example, the intellect of a patient with a chronic back condition who wishes for health and intends to achieve it by some means involving medicine may determine a number of suitable alternatives, such as seeing an orthopedist, visiting a chiropractic clinic, or consulting a physical therapist for a regimen of exercise. The patient's will might consent to each of these alternatives as acceptable. On the other hand, the intellect may present to will a divided judgment of the sort discussed above. If the agent is strongly averse to surgery, for example, his intellect may give conflicting judgments about seeing an orthopedist, presenting it as a medically acceptable alternative but also presenting it as painful, expensive, and disruptive of life. In such a case, there will be further interactions among the intellect, the will, and the passions, till one side of the divided intellect dominates over the other. In such a case, although the intellect might originally present seeing the orthopedist as one of the medically suitable alternatives, in the end the will may not consent to that alternative. (I will say something more about such iterated interactions of intellect and will below.)

If there is more than one means that the will consents to, then the intellect ranks the alternatives and calculates which of these means would be best now in these circumstances. The end of this process on the intellect's part is the conclusion of a practical syllogism: this is what should be done now. The will then wills *this*, in an act of *electio*.

'*Electio*' is often translated 'choice', but this is a misleading translation. It suggests that the will is engaged in what is really the intellect's act of ranking alternative possibilities. In the act of *electio*, what the will does is

accept the course of action that intellect proposes as the best. Furthermore, 'choice' ranges over cases which include acts of will that Aquinas would classify as simple volition of the end or intention.[59] For the sake of clarity, then, it seems better just to leave the term in Latin.

Electio and consent are not always different acts. So Aquinas says: "If only one means is found acceptable, then consent and *electio* do not differ really but only conceptually (*ratione*)."[60] If, for example, the intellect of the patient were convinced that chiropractors are quacks and that surgery is too risky a procedure for relieving back pain, then a review of his alternatives would suggest to his intellect that physical therapy is the only acceptable alternative. For his will, then, on that occasion, the acts of consent and *electio* would be the same.

Electio is generally followed by an act of intellect which Aquinas calls 'command' – intellect's issuing the imperative conclusion of its practical syllogism: "Do this!" – and an act of will called 'use', which is the will's causing one of the powers under its control to act. This is the last of the five sets of paired acts of intellect and will, and this is the point at which a bodily motion will take place, if what the will is directing is the motion of a part of the body.[61] Since the will has control over components of the person other than just body parts, however, this process can also conclude with the will's control over itself, as, for example in attempts at reform, when in consequence of a global volition (for example, to give up foods high in cholesterol) the will wills particular volitions (for example, willing to select North African chickpea stew from the menu, instead of steak).

So command and use are followed by the movement of something which the will has some control over, generally a movement of a part of the body, but on some occasions also some other faculty, such as the will itself. On the other hand, in consequence of some representation by the intellect, the will might also at this point exert control over the intellect – by, for example, causing intellect to reconsider the means, or to direct attention towards some things and away from others.

In general, then, Aquinas sees the hierarchically ordered interaction between will and intellect involved in producing a voluntary human action in this way:

I1 The intellect's determination that a particular end, under a certain description, is good now in these circumstances.

W1 A simple volition for that end.

I2 The intellect's determination that that end can be achieved by the willer, that the achievement of the end through some means is now and in these circumstances in the power of the willer.

W2 *Intention*: an act of will to try to achieve the end through some means.

I3 *Counsel*: the intellect's determination of the means suitable to achieve the end wanted. [If there is only one such means, then W3 collapses into W4, and I4 is omitted.]
W3 *Consent*: an act of will accepting the means the intellect proposes.

I4 The intellect's determination that *this* means is the best at this time in these circumstances.
W4 *Electio*: an act of will selecting the means the intellect proposes as best.

I5 *Command*: the intellect's imperative, "Do this!"
W5 *Use*: an act of will to exercise control over one of the things subject to the will, for example, a part of the body, the intellect, or the will itself.

This is a complicated picture of what goes into an action such as raising one's hand. But even so complicated a picture is a simplistic rendering of Aquinas's account.

To begin with, as I explained above, since the will exercises efficient causality on the intellect, it can at any time direct the intellect to reconsider a calculation or direct the intellect simply to stop considering some particular topic. (Of course, the will's doing so is a result of the intellect's maintaining that doing so is a good thing under some description in these circumstances.)

Furthermore, in some cases of complicated actions, at least some of the acts of intellect in the list I1–I5 (and thus also their consequent acts of will) can be accomplished only after a process of investigation involving a number of actions that themselves require an interaction of will and intellect. So, for example, Albert Speer reports that when his close friend Karl Hanke explained to him, with evident deep distress, that there were horrors occurring at Auschwitz, Speer realized that if he were to investigate, he might very well find that he himself must and could do something to affect what was happening there, but he saw at the same time that acting might cost him something. And so although he could not help believing his friend Hanke at least to some extent and sharing at least a little of Hanke's distress over whatever might be happening at Auschwitz, he willed not to investigate. Describing himself then, Speer wrote:

> I did not query him [Hanke]. I did not query Himmler, I did not query Hitler, I did not speak with personal friends. I did not investigate – for I did not want to know what was happening there ... from fear of discovering something which might have made me turn from my course, I had closed my eyes.[62]

Although Speer might well have wished that conditions were not as Hanke indicated they were in Auschwitz, he made sure to avoid information readily

available to him in order to prevent the formation of the act of will Aquinas calls intention.

As this example indicates, in order to form an intention to try to bring about some end an agent may need a lengthy process of investigation, involving many subsidiary actions, so that a considerable time elapses between the original volition of the end and the intention to bring it about. There could be similar processes intervening elsewhere in the sequence of acts of intellect and will as well.

On the other hand, there may be little or no subjectively discernible temporal separation among these acts of intellect and will. Although there is a conceptual ordering among them, they need not have a corresponding temporal ordering. An agent might see an end and the sole acceptable means to that end simultaneously, for example, and act on it instantly. Similarly, although any act of will is dependent on and subsequent to an act of intellect, whatever temporal space there is between the two might be so small as to be practically indiscernible. From the agent's point of view, then, the entire sequence of I1–W5 may occur in the twinkling of an eye.

Finally, none of I1–W5 needs to be in the forefront of consciousness, done with transparent awareness. Any of these acts might be tacit, acts of which we could be made aware only by careful questioning and introspection after the fact. There is obviously a continuum of accessibility to consciousness, from acts done with self-conscious awareness to acts which can be brought up into consciousness only with probing by professional therapists. Any of I1–W5 might fall anywhere on that continuum.

In general, where the action is simple and the character of the agent is harmonious and well-integrated, I1–W5 are likely to occur seamlessly and tacitly. Their distinctness is easier to see in cases where the action is complicated or difficult and/or when the agent has serious internal conflicts. Consider, for example, the distinction between intention and consent, which might ordinarily be subjectively indiscernible in the antecedents of some simple action. Speer reports that at one point during the Nuremberg trials he felt suicidal and gave a great deal of thought to how he might kill himself. When his biographer, Gita Sereny, asked him whether he really had meant to kill himself then, he said, "Well, ... one fantasizes about such things, almost an intellectual exercise if you like – yes, I figured out how it could be done, but not with the intention of actually doing it."[63]

How are we to understand Speer here? One way to do so is to suppose that Speer, depressed and suicidal during his trial, began with a view that in his circumstances suicide was good, a volition for that end, a recognition that that end was in his power, an intention to accomplish it, and considerable deliberation about the various means by which it might be accomplished. But his will would not consent to any of those means, and so the original intention and volition unravelled as well. That is why although

he was by his own report suicidal and contemplating ways of killing himself, in the end he did not do so.

Suppose, however, that we put internally complicated characters and actions to one side and apply the analysis exemplified in I1–W5 to an actual case of raising one's hand. Consider this example Gita Sereny relates from her own teenage years. Walking through her native city in Austria, which had by then been occupied by the Germans, she unexpectedly came across a band of Nazi soldiers who had corralled a group of middle-aged Jews and were forcing them to scrub the sidewalks on their hands and knees with toothbrushes.[64] To the increase of Sereny's horror, she also recognized her old family doctor among the Jews. Although she was young, she was thoroughly aware of the dangers of intervening. Nonetheless, she waded into the crowd of onlookers, attracted the attention of the soldiers, and expressed passionate moral indignation. The crowd, in some confusion, began to disperse, and the Jews made their escape. Let us suppose she attracted the attention of the soldiers, at least in part, by raising her hand and waving her arm. Let us also suppose what most people would take for granted, that her raising her hand in these circumstances is a free action. How are we to explain the occurrence of this action?

On Aquinas's account, the process begins with (S-I1) a judgment on the part of Sereny's intellect that what is happening is horrible and that it would be good if it stopped. Then (S-W1) her will forms the simple volition that it stop. (S-I2) Her intellect considers whether it might not be in her power to do something to stop it and concludes that it is in her power. In consequence, (S-W2) her will resolves to do something, and as a result of that act of will, (S-I3) her intellect calculates what it might be possible for her to do, together with a determination of the costs to her of each means and a judgment about which of these costs renders the corresponding act unacceptable.

Her intellect need not determine these alternatives discursively or even linguistically. Sometimes when we consider alternative courses of action, we do so by picturing to ourselves the proposed action and then going on to imagine, in a computer-modeling sort of way, what would happen next if we did the proposed action, as well as how we would react to such subsequent events, and so on. So, for example, Sereny might in the flash of a psychological moment see herself in her mind's eye flying at the soldiers, or trying to create a diversion by feigning illness in front of them, or any of a number of alternatives. She might simultaneously realize that some of these alternatives would be ineffectual to gain her end and that others would work but would cost her too much.

If, by one mechanism or another, her intellect comes up with a number of effective and acceptable alternatives, (S-W3) her will will also assent to them; as her intellect presents one or another alternative, her will also will give a nod of assent to each. If there are several to which she finds herself consenting, then (S-I4) her intellect will rank them and present the one

which, in the circumstances, under some description looks best now. Then (S-W4) her will will select that one in an act of *electio*. So, for example, we might suppose that after quickly sizing up the situation and seeing what she could do to interfere, Sereny rapidly comes to the view that she should intervene by first directing the soldiers' attention to herself with some gestures and then heaping moral indignation on them, and her will then consents to that means. At this point, we have the last act of intellect (S-I5) and will (S-W5) directing body parts to move; in consequence, she raises her hand, waves her arm, and starts to yell.

Furthermore, we may suppose, compatibly with this analysis, that from Sereny's subjective point of view, this entire process takes virtually no time and is largely tacit, so that she just finds herself, somewhat to her surprise, gesticulating and yelling at the soldiers. As I said, nothing in the postulation of this hierarchy of interactive intellections and volitions requires that any of it be done with full awareness and self-consciousness; the acts of intellect and will in question might be much nearer the bottom than the top of the continuum of accessibility to consciousness. But if we asked Sereny, after the fact, about why she acted as she did, on Aquinas's view the story she would tell (perhaps only with the probing of a skilled interlocuter) would give us the pieces of Aquinas's analysis of her action.

Furthermore, although the process may occur swiftly and tacitly, so that Sereny is not at the time aware of its components, at virtually any stage it is possible to imagine the story in such a way that the willings occur differently.

So, for example, after the first paired set of acts of intellect and will, Sereny's intellect, under the sway of the passions, might emphasize the dangers to her of intervention over the horror of the Nazi actions, so that what the intellect presents to the will is not one unified determination of what it would be good for her to do in these circumstances. In consequence of the intellect's double-minded emphasis of the danger, Sereny's will might command her intellect to stop thinking about this unpleasant scene or to begin attending to something else. This sort of aborting of the process leading to action, at the point between the first and the second paired set of acts of intellect and will, was characteristic of Speer in the years before 1943, and it helps to account for his learning a great deal about Nazi evils and yet never having a sense then that he could or should do anything about them.

Similarly, as we saw with the example of the suicidal Speer, at (S-I3) and (S-I4) there might be epicycles of interaction of the will and the intellect, in consequence of which the intellect might after all conclude that none of the alternatives available to achieve the end wanted are acceptable. If such epicycles occurred in her case, Sereny would give up or undo the original intention (S-W2).

Furthermore, because of the intellect's presentation of considerations against intervention, such as the danger to herself, Sereny's will might have

misdirected the attention of her intellect in such a way that what she selected as a means to her goal were not in fact effective to achieve that goal but which were also not very costly for her. Such a misdirection of the intellect by the will characterized Speer when he was finally made unavoidably aware of Nazi horrors at the slave labor camp making rockets. He was appalled when he saw the conditions of the laborers, who lived in freezing caves without adequate ventilation or sanitation and who worked eighteen-hour shifts on starvation rations. On this occasion, he also could not hide from himself that it was within his power to do something about their conditions, since at that time he was the chief minister in charge of armament production. As was made plain during the Nuremberg trials, it was in fact open to Speer to refuse to employ slave laborers in armament production. But any sympathy for the plight of slave laborers would have brought him into open conflict with high-ranking Nazis, and this he wanted to avoid.[65] Consequently, in the circumstances, what Speer's intellect, influenced by the passions and misdirected by will, determined that it was best for him to do, the one thing he chose at the W4 level, was to order the construction of concentration camp barracks for the workers. The suffering occasioned by lack of proper food, clothing, ventilation, and sanitation was not alleviated by that means; nor was the problem of overwork under horrific conditions. And, of course, the monumental injustice of the slave labor itself was not addressed by the construction of barracks. Nonetheless, because his will selectively directed the attention of his intellect, Speer managed to persuade himself at the time that he had taken the best means available to him to stop the suffering of the workers.

So Aquinas's intricate analysis of action, which may look byzantine when we consider a simple action such as raising one's hand, looks considerably more understandable when we apply it to even simple actions in complicated circumstances, such as Sereny's. And it yields powerful and plausible explanations of the actions, and inactions, of a person such as Speer, who was seriously riven by internal conflicts.

Liberum arbitrium and the ability to do otherwise

When we say that Sereny's act of raising her hand is a free act, we mean that it is an act done with freedom of will, and Aquinas would agree. His explanation of freedom in such actions is often couched in terms of *liberum arbitrium*, and it is because of what Aquinas says about *liberum arbitrium* that he is generally supposed to see human freedom as a function of the will's ability to do otherwise.

It is true that Aquinas makes a strong connection between *liberum arbitrium* and the ability to do otherwise. In fact, although '*liberum arbitrium*' means 'free judgment', Aquinas sometimes sounds as if *liberum arbitrium* is just the power of the will to do otherwise than it does. So, for example, he

says, "whoever has *liberum arbitrium* has it in his power to will or not to will, to do or not to do".[66]

Nonetheless, it is a mistake to suppose that '*liberum arbitrium*' is Aquinas's term for the freedom of the will in general. In fact, he explicitly associates *liberum arbitrium* with only one of the acts of will needed to produce a human action, namely, the act of will which is *electio*. So, for example, he says, "*liberum arbitrium* is that in accordance with which we have *electio*".[67] And in another place he says:

> with regard to intellective appetite, the will and *liberum arbitrium* – which is nothing but the power of *electio* – are related just as the intellect and reason are related with regard to intellective cognition[68] ... Now the act of *electio* is to desire something for the sake of obtaining something else, so that, strictly speaking, it has to do with means to an end ... Therefore, it is clear that the will is related to the power of *electio* – that is, to *liberum arbitrium* – just as intellect is related to reason.[69]

In discussing the will of angels, he worries about whether angels have *liberum arbitrium*, and he raises the worry in this way:

> It seems that there is no *liberum arbitrium* in angels, for the act of *liberum arbitrium* is *electio*, but there cannot be *electio* in angels since *electio* is an appetite associated with counsel, and counsel is a kind of investigation ... But angels do not cognize by investigation, because this pertains to the discursiveness of reason [which angels do not have].[70]

And elsewhere he associates the act of *liberum arbitrium* just with the selection of a means to an end,[71] which is *electio*.

So although, on Aquinas's account, *liberum arbitrium* involves being able to do otherwise, *liberum arbitrium* is not identical to freedom of the will in general, but instead picks out just the power of the will manifested in the act Aquinas calls *electio*, the will's assenting to the means apprehended as best for the end wanted.

Furthermore, not every free action has an act of *electio* in the series of acts of will and intellect producing that action. As we saw earlier, when the intellect finds only one acceptable means to an end, then the act of *electio* collapses into the act of consent, precisely because there are not alternatives available for the intellect and the will to act on.[72]

In addition, even understood narrowly as confined to the power of the will producing *electio*, *liberum arbitrium* is not a property of the will alone. It can be understood as a property of the will only insofar as the will itself is understood to be the rational appetite and to have a close tie to the intellect.

So, in some places Aquinas speaks of *liberum arbitrium* as if it were in fact a power of both the will and the intellect. When he is asking whether God has *liberum arbitrium*, one of the objections he raises begins with the uncontested remark that "*liberum arbitrium* is a faculty of reason and of will".[73] Elsewhere, speaking more precisely, he says:

> the nature of *liberum arbitrium* should be considered on the basis of *electio*. But both the cognitive power and the appetitive power contribute something to *electio*. From the cognitive power we need counsel, by which we determine what is to be preferred to what, and from the appetitive power we need the desire to accept what counsel has determined.[74]

That is why, he goes on to say, Aristotle supposed we ought to assign *electio* either to the "appetitive intellect" or to the "intellective appetite", phrases meant to indicate the intertwining of intellect and will in *liberum arbitrium*. (Of this pair, Aquinas opts for 'intellective appetite' – that is, the will understood as preceded by certain acts of intellect – as the more appropriate candidate for the faculty to which *liberum arbitrium* is to be assigned.) Furthermore, although he thinks that if we take *liberum arbitrium* to be a faculty rather than one of the powers of a faculty, then it is just the will itself, he nonetheless emphasizes that *liberum arbitrium* is the will understood as interwoven with and dependent on intellect.[75]

Finally, although Aquinas does associate *liberum arbitrium*, understood as *electio*, with the ability to do otherwise, the ability to do otherwise is not found only at the level of *electio*, as our consideration of the series I1–W5 has already shown us. It is possible for it to be manifested at any of the other stages as well.

This is not because at any stage the will may simply choose not to follow intellect,[76] or may act in some other way as a homunculus independent of intellect. It has instead to do with the relations between intellect and will. Insofar as the will has control over itself, this is an indirect control mediated by the intellect. It is a limited control as well, since there are intellective apprehensions which are not preceded by or dependent upon acts of will. The will may not always succeed, for example, in getting the intellect to stop thinking about something, because something in the environment causes the thought to recur repeatedly to the intellect, as in the case above regarding the screams of the tortured. But, within a limited range, the will can be effective at controlling the intellect, for example, by being able in some circumstances to redirect the attention of the intellect, and in that way the will can also have indirect control over itself. It is easy to imagine Sereny willing otherwise at one point or another throughout the series of I1-W5 in virtue of her having thought differently about the relevant issues, the risks associated with intervening, for example, or the means of intervening open

to her and their likely effectiveness. She might even have aborted the entire series by directing her intellect to concentrate, for example, on some important task which needed her urgent attention then, and which was incompatible with her stopping to help the Jews.

Of course, the will's directing the intellect in any of these ways will itself depend on the intellect's presenting the will's doing so as good under some description in these circumstances. That is why a human agent's control over her own actions is a function of both the intellect and the will and is an emergent power or property, resulting from the dynamic interaction between the intellect and the will, rather than a static power localized in the structure of one particular faculty. On Aquinas's account of freedom, we have to attribute freedom to a human being with regard to willing or acting; for him, freedom is not just a property of one particular component of a human being, whether the will or the intellect.

Freedom and the ability to do otherwise

As we have seen, Aquinas supposes that human beings have control over their own actions and that this control is manifest, perhaps even specially evinced, in *electio*, which is an act of will involving the ability to do otherwise. But it is also important to recognize that, for Aquinas, the faculties that give a human being control over her actions – namely, the intellect and the will – are not themselves a function of or dependent on an ability to do otherwise. As long as these faculties are functioning normally (and, as we have seen, normal functioning precludes the will's being determined by anything outside the willer), then, on Aquinas's view, an agent has control over her actions and freedom with respect to her willing and acting, even if she cannot do otherwise.

We have already seen some sign of this attitude on Aquinas's part in his pointing out that in some cases *electio* collapses into consent, when the intellect presents to the will only one alternative as the means to achieve some end willed by the agent.[77] Such cases still count as acts over which an agent has control.

Another sign of the same attitude can be found in what Aquinas says about the limits of *liberum arbitrium*. Something can be outside the power of *liberum arbitrium* in two ways, he says. First, it can exceed the efficacy of the motive powers. For example, flying by flapping one's arms is not within the power of human *liberum arbitrium*, because flying exceeds the capacities of human powers of movement. Second, and this is the important point for our purposes, acts which we do under the sudden impetus of some passion, such as wrath or concupiscence, are outside the power of *liberum arbitrium* because such acts occur quickly, before reason can deliberate about them. An agent may be able to avoid letting passion have such effects in himself by paying careful attention; but an agent cannot always be paying careful attention.[78]

In unguarded moments, such passions can arise in an agent without the process of reason, even tacit reason, which is necessary to choice; and the agent in acting on such a passion is consequently unable to do otherwise on that occasion. If Aquinas supposed that *liberum arbitrium* were identical to free will or if he thought that the ability to do otherwise were in general essential to free will, he should go on to say here that acts done under the influence of passion are not free acts, since the agent in question is unable to do otherwise, and that therefore these acts are not sinful or blameworthy. What he in fact says is that such acts *are* sinful, but that they constitute only venial sins since their suddenness and their taking us by surprise provide us with some excuse.[79]

In *QDM* Aquinas argues at length that it is heretical to suppose that the will is moved of necessity to will whatever it wills, because such a supposition undermines all attributions of praise and blame, removes the impetus to deliberation, exhortation and precept, and so on. But in that very question where he is so concerned to establish the will's ability to will otherwise than it does, he also grants that the will does in fact sometimes will what it wills of necessity. This happens when what is willed is so altogether good that the intellect cannot find any description under which to present it as not good – as in the case of happiness. But it also happens in other sorts of cases as well, as, for example, when the intellect establishes very clearly that one course of action is in every respect superior to any other available. So Aquinas ends his discussion of this point with the conclusion that although the will is sometimes moved of necessity, it is not always so moved.[80]

What Aquinas means us to understand here, we might suppose, is that although the will sometimes wills something of necessity, it is free only when it is not moved of necessity; that is why, we might think, he is so concerned to show that the will is not *always* moved of necessity. But such an interpretation would be a mistake. In arguing that the will does will some things of necessity, Aquinas explains that there are two sorts of necessity which might be taken to operate on the will. One is the necessity of coercion, which occurs when some cause outside the agent causally produces in the will a volition for some particular thing.[81] This sort of necessity, Aquinas says, is incompatible with freedom. (In fact, as we saw earlier, there can be no such coercion of will for Aquinas, because he thinks that it is conceptually impossible for any necessity of this sort to operate on the will; coerced by external necessity, the will ceases to count as an intrinsic principle, and so it ceases to count as a *will*.) But there is also the necessity of natural inclination, Aquinas says. This is the sort of necessity by which the will wills, for example, those things whose goodness is overwhelmingly apparent to the agent. Necessity of this sort, according to Aquinas, is not repugnant to the will and does not take away the will's freedom.[82] Siding with Augustine, he says: "Freedom ... is opposed to the necessity of coercion, but not to the necessity of natural inclination."[83]

That is why Aquinas thinks that there can be freedom of will on the part of the redeemed in heaven who no longer have the ability to will evil.[84] Their inability to will anything but the good stems not from any extrinsic coercion being exercised on their wills but rather from the clear view their intellects have of the nature of the good: "Where there is no defect in apprehending and comparing, there can be no volition for evil with regard to those things which are ordered to the end, as is clear in the case of the blessed."[85]

Their intellects can no longer find descriptions under which to present as good things that are really evil. Although the blessed cannot will evil, they nonetheless will freely whatever good they will.

Elsewhere Aquinas contrasts the necessity of coercion with the necessity of the end. When someone is compelled by an extrinsic cause in such a way that he cannot do otherwise than he does, this is necessity of coercion, and it is altogether repugnant to the will, Aquinas says. But necessity of the end is different. It arises, for example, when the end desired can be attained in only one way, as when crossing the sea requires using a ship. This sort of necessity is in no way repugnant to the will, on Aquinas's view. But, Aquinas concludes, the necessity of natural inclination is similar in relevant respects to necessity of the end, and so necessity of natural inclination is also not repugnant to the will. For this sort of reason as well as others, Aquinas maintains that "natural necessity does not take away the freedom of the will".[86]

Clearly, then, Aquinas does not suppose that human freedom even as regards willing consists in or depends on the ability to do otherwise. Aquinas would consequently reject what is called the Principle of Alternative Possibilities (PAP). PAP has many different formulations, but they all share this claim:

> (PAP) A person has free will with regard to (or is morally responsible for) an action A only if he could have done otherwise than A.[87]

Aquinas would reject this principle not only for bodily actions but even, as we have seen, for acts of will.

Many contemporary philosophers also suppose that PAP is false. A standard strategy for showing that PAP is false is what has come to be known as a Frankfurt-style counterexample.[88] In such an example, a person P does an action A in circumstances that incline most people to conclude that P is doing A freely, but (in the example) there is some mechanism that would have operated to bring it about that P would have done A if P had not done A by himself. In the actual sequence of events presented in the counterexample, however, the mechanism does not operate, and P does do A by himself. So the counterexample is designed to make us think that P does A

freely in the actual sequence of events although it is not the case that P could have done otherwise than A.[89] Frankfurt-style counterexamples can be constructed either for bodily actions, such as leaving a room, or for mental actions, such as deciding to leave a room.[90]

Some contemporary libertarians defend PAP by arguing strenuously against Frankfurt-style counterexamples.[91] But Aquinas would presumably find such counterexamples to PAP acceptable. In the actual sequence of events, P's doing A is not brought about by any cause extrinsic to P, and nothing in the counterexample keeps us from supposing that it is only P's own intellect and will which are responsible for P's doing A.

These reasons for the rejection of PAP do not have the implication that libertarian free will is never accompanied by alternative possibilities. On the contrary, as we have seen, Aquinas emphasizes human ability to do otherwise, for example in his account of *liberum arbitrium*. It may in fact be true on his view that in most cases in which an agent acts with free will, the agent can do otherwise. The ability to do otherwise would then be what medieval logic calls 'an associated accident', a non-essential property that accompanies its subject most or even all of the time. Nonetheless, on Aquinas's account, human freedom even with regard to willing does not depend on her having alternative possibilities available to her; it is possible for an agent to act freely even when she cannot act otherwise than she does.

In what sense does Aquinas count as a libertarian if this is his account of human freedom? To answer this question, we need to be clearer about what is required for a theory of free will to count as libertarian.

Libertarianism and causal determination

Libertarian free will is sometimes characterized in this way:

> (L) an act of will, such as a decision, is free only if [1] "the decision [is] not ... causally determined, and ... [2] the agent could have avoided making it."[92]

As we have seen, Aquinas does not accept the second conjunct of (L), (L2). Because of the implications of Frankfurt-type counterexamples, many contemporary philosophers also suppose that (L2) is too strong. So perhaps (L2) is not a necessary condition for libertarian free will. But what about (L1), the claim that a decision is free only if the decision is not causally[93] determined?[94]

In connection with (L1), it is important to ask what theory of mind a libertarian account of free will is to be embedded in. Suppose we assume, as perhaps most theories of mind now do, that there is some sort of correlation between a mental state and a set of neural firings. This will be a one–many correlation: there will need to be many neural firings to produce one mental

state. The mental state of recognizing a girl across a crowded room as your daughter, for example, requires the firing of neurons from the retina through the superior colliculus, the lateral geniculate nucleus of the thalamus, and various parts of the visual cortex, and into those parts of the brain specialized for memory and the recognition of faces. The entire causal sequence of many neural firings is required to produce one mental state, which is an effect of the sequence.

This characterization of the mental state as causally brought about by a series of neural firings does not presuppose any particular sort of correlation between the mental and the physical. It is compatible with either type-type or token-token identity theories, but it does not presuppose either of them. By saying that mental states are correlated with neural sequences, I mean to make only a vague association between mental states and neural sequences, compatible with various theories of relations between mind and brain. Those who think that the mental is identical to the physical can suppose that the mental states and the neural sequences are correlated because the mental states are the neural sequences. Non-reductive materialists can take the correlation as some version of emergence or supervenience. As far as that goes, even dualists such as Aquinas, who takes the soul to be the form of the body, can accept this characterization of the mental as correlated with the physical in virtue of the mind's being implemented in configurations of the physical.[95] Only the most extreme versions of Cartesian substance dualism will reject it. On an extreme version of Cartesian dualism – which Descartes himself may have held – some mental states, such as thinking and willing, go on only in the immaterial soul and are not mirrored by or correlated with brain processes.[96]

On any theory of the mind, including Aquinas's, that sees a stronger tie between mind and body than extreme Cartesian dualism, there will be some sort of correlation (up to and including identity) between mental processes and brain processes. On such non-Cartesian theories, however exactly we interpret the correlation between a physical state and a mental state, the mental state is a causal outcome of physical states.

If (L1) is right, however, only those mental acts which are not so much as correlated with patterns of neural firings can count as free. But then libertarianism could be held only by extreme Cartesian dualists. And, clearly, there are committed libertarians who reject any form of Cartesian dualism.[97] So (L1) is also too strong; to avoid making libertarianism a theory only extreme Cartesian dualists can hold, it needs to be revised. Because libertarians identify themselves at least in part by their opposition to compatibilism, libertarianism does need to rule out as non-free mental or bodily acts that are causally determined by something outside the agent. The claim that a free act is the outcome of a causal chain which originates in some cause external to the agent's own intellect and will is incompatible with libertarian free will. But the mere claim that a free act is the outcome of a causal chain is not.[98]

A more reasonable version of the relevant necessary condition for libertarianism is therefore this:

> (L1′) a decision is free only if it is not the outcome of a causal chain that originates in a cause outside the agent.

An objection

At this point someone may object. If we bring contemporary theories of the nature of the mind into the discussion of Aquinas's theory of free will, the objector will argue, then (unless we accept extreme Cartesian dualism) no volition can be free in the sense specified in (L1′) . So, insofar as Aquinas's account centrally includes (L1′) , it can be shown to be false. For ease of discussion we can put the objector's point in contemporary terms by taking the physical states with which the mental is correlated to be neural states. Then the objector's point can be formulated this way:

> (O) (1) there are no uncaused neural events, and (2) the chain of causation eventuating in a human action will be traceable ultimately to something outside the agent.

So if mental states are causally determined by neural states, they will also be determined, more remotely, by causes outside the agent, contrary to the stipulation in (L1′) .

If correct, this objection, which presupposes that the mental is embedded in a complete causal nexus governing the whole realm of the physical, is fatal to Aquinas's theory of free will since on Aquinas's theory nothing outside the agent exercises efficient causality on the will.[99] So the objection is worth considering in some detail.

The objector will perhaps meet little opposition regarding (O1), the claim that all neural events are caused. Is he also right in (O2), the claim that the chain of causation for neural events will lead outside the agent? Are all brain processes causally determined, ultimately, by something outside the agent? We might suppose that they would have to be. Otherwise, it would seem, brain events would be insulated from the physical interactions of the surrounding extra-bodily environment. Or, to put the point in terms more suitable to Aquinas's account, if nothing in nature exercises efficient causality on the will, then it looks as if the causal nexus of events is incomplete or even magically interrupted at the level of the will (or the intellect and the will).

But the objector's way of looking at things, which will perhaps seem obviously right to many people, rests on philosophical convictions that include both reductionism and determinism, as well as the assumption of causal completeness at the microlevel. Although reductionism comes in many

forms, its different forms share a common attitude: all the sciences are reducible to physics, and all scientific explanation is ultimately formulable solely in terms of the microstructural. But this attitude discounts the importance of form, as Aquinas thinks of it (or levels of organization, as contemporary philosophers of biology tend to say). It also discounts the causal efficacy things have in virtue of their form or level of organization. (This feature of reductionism perhaps helps explain why it has come under special attack in philosophy of biology.[100] Biological function is frequently a feature of the way in which the microstructural components of something are organized, rather than of the intrinsic properties of the microcomponents themselves.)

In his attack on reductionism in *The Disorder of Things*, John Dupré takes the examples in his arguments against reductionism from ecology and population genetics.[101] On reductionist views, Dupré says:

> events at the macrolevel, except insofar as they are understood as aggregates of events at the microlevel – that is, as reducible to the microlevel at least in principle – are causally inert. This ... is the classical picture of Laplacean determinism, except that it does not depend on determinism, only the causal completeness ... of the microlevel.[102]

But, as Dupré's examples from biology make clear: "there are genuinely causal entities at many different levels of organization. And this is enough to show that causal completeness at one particular level [the microlevel] is wholly incredible."[103]

Dupré thinks that commitment to reductionism was strongly motivated by a belief in determinism and in causal completeness at the microlevel.[104] Consequently, Dupré thinks his arguments against reductionism are also part of an argument against these views as well. His arguments against reductionism provide, he claims, an "inversion of the reductionist modus ponens (causal completeness requires reductionism) into ... [an] antireductionist modus tollens (the failure of reductionism implies the failure of causal completeness)".[105]

If Dupré is correct in his views, which support Aquinas's metaphysical attitude towards the importance of form,[106] then, while it is uncontroversial that neural events are causally influenced by events outside the agent, it is not at all clear that they are causally determined by events outside the agent. If reductionism is false, then, as Dupré says:

> there is no reason why changes at one level may not be explained in terms of causal processes at a higher, that is, more complex, level. In the case of human action, the physical changes involved in and resulting from a particular action may perfectly well be explained in

> terms of the capacity of the agent to perform an action of that kind.[107]

So if form counts for something in our ontology, as Aquinas supposes it should, then reductionism, and with it determinism and the assumption of causal completeness at the microlevel, should also be rejected. In that case, there can be causal efficacy at various levels of organization, including the level of human agents. A person's intellect and will can exercise real causal efficacy, from the top down, in the way Aquinas supposes they do. Dupré says:

> humans have all kinds of causal capacities that nothing else in our world has ... There is no good reason for projecting these uniquely human capacities in a reductionist style onto inanimate bits of matter. Nor is there anything ultimately mysterious about particular causal capacities being exhibited uniquely by certain very complex entities.[108]

So, if Dupré's arguments are correct, if Aquinas's attitude towards the ontological importance of form is correct, then (O2) is false. Consequently, it cannot count as a reason for rejecting (L1′) , and Aquinas's account of free will as dependent on an agent's ability to initiate a causal chain leading to action is not undermined by the objection.

Aquinas among the libertarians

Of course, (L1′) is not sufficient, on Aquinas's account or on the views of contemporary libertarians, for libertarian free will. What else is to be added, if it is not some version of PAP?

For Aquinas, human freedom is vested in human cognitive capacities and in the connection of the will to those capacities. As long as human acts originate in those faculties, those acts count as free, even if the agent could not have done otherwise in the circumstances or the act of will is necessitated by natural inclinations of the intellect and the will. On Aquinas's account, the causal chain culminating in a free mental or bodily act cannot originate in a cause extrinsic to the agent[109] just because it must have its ultimate source in the proper functioning of the agent's own intellect and will.

What is sufficient for libertarian free will, then, on Aquinas's account, is that the ultimate source of an action be the agent's own will and cognitive faculties. Since this condition entails (L1′) , we can reformulate the characterization of libertarianism in this way:

> (L′) an act is free if and only if the ultimate cause of that act is the agent's own will and intellect.

This understanding of human freedom also helps explain why acts generated randomly are no more free than acts brought about by causes extrinsic to the agent. Random acts do not have their ultimate source in the agent's own intellect and will, any more than acts brought about by causes extrinsic to the agent.

Some contemporary philosophers share Aquinas's basic intuition about the nature of freedom. For example, John Martin Fischer's account of moral responsibility is like Aquinas's account of free actions in this respect: Fischer thinks that moral responsibility is a function of an agent's reasons-responsive mechanism.[110] And one way of understanding the point of contention between compatibilists and libertarians of any sort is in terms of this question:

> (Q) Is it possible for the mind (or the brain) to be a reasons-responsive mechanism if the only candidates for the origin of mental events (or neural events) are random accidents or causes outside the agent?

A compatibilist will answer (Q) in the affirmative; a libertarian such as Aquinas will answer it in the negative.

Part of what makes it hard to adjudicate between compatibilists and libertarians here is that we are so far from understanding how the brain (or the mind implemented in matter) can be a reasons-responsive mechanism at all, on anybody's theory of mind. Except for extreme Cartesian dualists, most contemporary philosophers suppose that the brain does constitute a reasons-responsive mechanism, but it is hard to see how a biological organ such as the brain can respond to reasons or process information. Neurobiologists are in no position to give anything other than promissory notes on this subject, and the best philosophical attempts are ultimately unpersuasive even if ingenious.[111] But unless we understand how a biological organ such as the brain can be an information-processor or a reasons-responsive mechanism, we will not be able to give a neurobiological account of our cognitive functioning which successfully adjudicates the different answers to (Q) given by compatibilists and libertarians, such as Aquinas.

What Dupré's arguments indicate and what Aquinas's position shows is that the question is not settled in favor of compatibilism by philosophical considerations either. Looked at from the point of view of philosophy, compatibilism appears to be a sort of codicil to reductionism and determinism. If all macrophenomena are reducible to microstructural phenomena and if there is a complete causal story to be told at the microlevel, then if we as macroscopic agents are free with respect to any of our actions, that freedom has to be not only compatible with but in fact

just a function of the complete causal story at the microlevel. On the other hand, if the metaphysical attitudes of Aquinas or Dupré are right, compatibilism is an unnecessary concession, an attempt to preserve what we commonly believe about our control over our actions in the face of a philosophically mistaken and scientifically premature commitment to reductionism and determinism.

Part III

THE NATURE OF HUMAN EXCELLENCE

knowledge or ignorance of how things went" (*God and the Soul* (London: Routledge and Kegan Paul, 1969), p. 90.) On the hypothesis that there is an eternal, omniscient, omnipotent God, the praying of such a prayer would indeed qualify as "the only instance of behaviour, on the part of ordinary people whose mental processes we can understand, designed to affect the past and coming quite naturally to us" (Michael Dummett, "Bringing About the Past", *Philosophical Review* 73 (1964): 341). Dummett does not draw on the concept of divine eternality, but, if it is acceptable in its own right, its introduction would lead to a modification and strengthening of some of the claims he makes – e.g., "I am not asking God that, even if my son has drowned, He should *now* make him not to have drowned; I am asking that, at the time of the disaster, He should then have made my son not to drown at that time" (ibid., p. 342).

79 What I present here is essentially Boethius's line against the suggestion that divine omniscience and human freedom are incompatible, a line in which he was followed by many medievals, especially Aquinas. On Aquinas's use of the Boethian solution, see Kenny (1969).

80 *QDV* 2.12.

81 Various thinkers have raised sophisticated and complicated objections to the position Aquinas adopts in this connection; space does not permit a more detailed evaluation of those objections here. For some consideration of these issues, see Stump and Kretzmann (1991).

82 *QDV* 2.12 ad 1.

83 *QDV* 2.12 ad 2.

5 God's knowledge

1 What exactly the doctrine of impassibility is on Aquinas's understanding of it is a matter worth investigation. For some discussion, see Chapter 3 on God's simplicity.

2 Leo Elders, *The Philosophical Theology of St. Thomas Aquinas*, Studien und Texte zur Geistesgeschichte des Mittelalters (New York: E. J. Brill, 1990).

3 Elders (1990, p. 234).

4 Elders (1990, p. 230).

5 Elders (1990, p. 234).

6 Elders (1990, p. 238).

7 Brian Shanley, "Eternal Knowledge of the Temporal in Aquinas", *American Catholic Philosophical Quarterly* 71 (1997): 205. (For a reply to this paper of Shanley's, see Eleonore Stump and Norman Kretzmann, "Eternity and God's Knowledge: A Reply to Shanley", *The American Catholic Philosophical Quarterly* 72 (1998): 439–445.)

8 See, e.g., *SCG* I.66.

9 *QDV* 2.8.

10 See, e.g., *ST* IaIIae.79.1. Cf.also Norman Kretzmann, "God Among the Causes of Moral Evil: Hardening of Hearts and Spiritual Blinding", *Philosophical Topics* 16 (1988): 189–214.

11 In "Divine Causation and Human Freedom in Aquinas", *American Catholic Philosophical Quarterly* 72 (1998): 99–122, Brian Shanley seems to think it is possible to reconcile freedom and divine causality by showing that for Aquinas even the free human will is not independent of God. Certainly, for Aquinas, nothing creaturely is independent of God. But the problem is this. For Aquinas, human beings have *liberum arbitrium*, and *liberum arbitrium* is the ability to do otherwise than one does: "we are said to have *liberum arbitrium* because we can take up one thing, having rejected another, which is what it is to choose." (*ST*

Ia.83.3). On Shanley's interpretation of Aquinas as holding that God's knowledge is causal, however, God causes everything (or everything temporal) that he knows. Since God knows human acts, on Shanley's view God's knowledge causes those human acts. But if God causes human acts, then in what sense is it possible for any human being to act otherwise than she does? Clearly, it is not possible that God cause a person to do some act A and yet she does not-A. Is 'ability to do otherwise' here supposed to have just the compatibilist sense of 'ability to do otherwise if one chose to do otherwise'? On compatibilism, there is no genuinely open future for human beings; on the theological analogue to compatibilism, there is no genuinely open future for human beings because God determines the future in every respect. Surely, that is not the view Shanley means us to attribute to Aquinas. And yet in what sense is there an open future for human beings if God knows the future and God's knowledge causes everything he knows? Furthermore, Shanley seems not to recognize what his view of God's knowledge as causal commits him to. He says, "God moves the will efficiently by inclining it interiorly. How this can be so without violating human freedom is the key question" (Shanley, 1998, p. 112; footnote omitted). But if God's knowledge is causal, as Shanley argues, God does not just incline the will interiorly. He causes it to be in whatever state it is in. If God did not cause the states of the will, he would not know them, on Shanley's view. Shanley argues that God's action on the will "is not coercive" (ibid., p. 113). But, on Shanley's view, if a human will is in state A, God knows that it is, and his knowing it causes the will to be in state A. And it is very hard to see how God's *causing* the will to be in state A does not constitute coercing the will to be in state A. Is it possible that God could cause the will to be in state A and yet the will could be in some other state?

12 *QDV* 2.15 ad 1.

13 Notice that this determinism is *causal* and therefore not to be confused with the much-discussed alleged incompatibility of divine foreknowledge and human freedom.

14 See, e.g., *ST* Ia.14.3 and *SCG* I.66.

15 *QDV* 2.12.

16 Elders (1990, p. 237).

17 Ibid., p.239.

18 Ibid., p.238.

19 See, e.g., *ST* Ia.14.13.

20 *ST* Ia.14.8.

21 *SCG* I.65.530.

22 *SCG* I.49.412.

23 See, e.g., *SCG* I.63.521, and *QDV* 10.4 obj. 5.

24 For some discussion of Aquinas's views of the means by which cognition arises, see Chapter 8 on the mechanisms of cognition.

25 *ST* Ia.55.2 obj. 1; *ST* Ia.14.1. 'Understand' is a standard translation of Aquinas's '*intelligere*', but it can be misleading. As Aquinas uses '*intelligere*', even a case of your recognizing that something you see is a tree counts as intellect's understanding. (For further discussion of Aquinas's views of the intellect and its operations, see Chapter 8 on the mechanisms of cognition.)

26 *ST* Ia.14.5.

27 *SCG* I.46.389.

28 *SCG* I.31.281. See also, e.g., *QDV* 8.10 and *ST* Ia.55.3.

29 For a brief but representative instance of this complaint, see Daniel Dennett, *Consciousness Explained* (Boston: Little, Brown, 1991), pp. 33–37.

30 See, e.g., *ST* Ia.85.1 and Ia.86.1, and *In DA* III.12–13.

31 *ST* Ia.14.6. See also, e.g., *SCG* I.65; *QDV* 2.5; *QDP* 6.1; and *In Sent* I.36.1.1.
32 *ST* Ia.14.11.
33 See, e.g., *SCG* III.76.
34 *ST* Ia.55.2. See also *ST* Ia.54.4 ad 1; and *QDV* 8.9.
35 *QQ* 7.1.3 ad 1.
36 *ST* Ia.89; see also *ST* Ia.55.3.
37 *QDV* 10.5 ad 6.
38 See, e.g., *QDV* 10.4.
39 *ST* Ia.57.2 s.c.
40 Another helpful analogue to God's knowledge is the knowledge the separated human soul is supposed to have after death but before the resurrection of the body. The separated soul also knows embodied individuals although it lacks corporeal senses; and Aquinas holds that after death it can cognize, as angels do, through forms that are not acquired from the cognized things. (See, e.g., *ST* Ia.89.1.3 and 4; and *QQ* 3.9.1.) The discussion we are about to develop could, therefore, have been based on the separated soul's cognition rather than on angelic cognition. But special problems in Aquinas's discussion of the knowledge separated souls are supposed to have make it more appropriate in this connection to focus on his account of angelic cognition.
41 *ST* Ia.55.3 ad 2.
42 See, e.g., *ST* Ia.57.1; Ia.85.1 and 5; and *In DA* III.8. See also Norman Kretzmann, "Infallibility, Error, and Ignorance", in Richard Bosley and Martin Tweedale (eds), *Aristotle and His Medieval Interpreters* (*Canadian Journal of Philosophy*, supplementary volume 17 [1991]), pp. 159–194.
43 See, e.g., *In DA* III.8.705, 706, 712, and 713.
44 *In DA* III.8.712–713.
45 *In DA* III.8.712–713. See also, e.g., *ST* Ia.86.1 and Ia.85.1.
46 *In DA* III.8.718. See also *ST* Ia.85.2.
47 Oliver Sacks, *The Man Who Mistook His Wife for a Hat* (New York: Summit Books, 1985), p. 13. For an excellent recent neurobiological study of agnosias, see Martha J. Farah, *Visual Agnosia* (Cambridge, MA: MIT Press, 1990). In *Principles of Neural Science* by Eric Kandel, James Schwartz, and Thomas Jessell (New York: Elsevier, 1991), agnosia is defined as "the inability to perceive objects through otherwise normally functioning sensory channels" (p. 831). Not all agnosias are visual. e.g., astereognosia, which is caused by damage to the parietal cortex, is "an inability to recognize the form of objects by touch even though there is no pronounced loss of somatosensory sensitivity" (ibid.).
48 For the sake of brevity, I am glossing over many complications here, but two of them should be at least noted. In the first place, agnosia is a puzzling phenomenon. I introduce it here as a helpful illustration; but if the example were pressed, it would raise more questions than it answers. For instance, one odd feature of agnosia is that the patient plainly *can* identify *some* genus to which the thing he sees belongs. To cognize a glove as a continuous surface is to cognize that particular universally, but the universal serving as the medium of cognition in that case is very abstract, nothing like the thing's proximate genus, let alone its species. Second, although I present the discussion here in terms of the *quod quid est* of whatever is being cognized, what is at issue in cognizing a particular universally cannot be only the genera and species to which the cognized thing belongs. For the medievals, universals consist not only in genera and species but also in the rest of the predicables, including differentiae, propria, and accidents. Therefore, in recognizing that the thing he sees has five outpouchings, the agnosia patient is also cognizing a particular through the medium of a universal. And so any conscious awareness of any shareable characteristic of any thing presented to the senses counts as cognizing that particular universally.

49 *ST* Ia.55.3.
50 Epistemic contact should be understood as a component in perception or in divine analogues to perception. Though I certainly do not have a set of necessary and sufficient conditions for the notion of epistemic contact, we can take a rough characterization of it from contemporary neurobiology. According to contemporary neurobiological theories of perception, after incoming sensory data have been processed at low levels, they are processed further by various other "modules" or "systems", including one that connects sensory data to conscious awareness and one that matches sensory data to information stored in associative memory. (For a clear, simple discussion of the connections between, e.g., visual sensory data and associative memory, see Stephen Kosslyn and Oliver Koenig, *Wet Mind: The New Cognitive Neuroscience* (New York: Macmillan, 1992), pp. 52–58.) By 'epistemic contact' I mean the result of the central nervous system's processing of sensory data that does *not* include the matching of the data to information stored in associative memory. I take this description of epistemic contact to be roughly equivalent to the following description in Aquinas's terms: the apprehension of the accidents of some extramental thing without any apprehension of that thing's *quod quid est*.
51 Since the prerequisite sensory experience in the case discussed here would typically be the experience of cups, it may seem that our representations have to be acquired from the particular extramental things cognized in order for there to be cognition of things outside the mind. But, of course, we can be and sometimes are equipped ahead of time with an intelligible form we need in order to recognize something the first time we encounter it. The acquisition of intelligible forms can be carried out conceptually, e.g., by imagination.
52 *QQ* 7.1.3.
53 *ST* Ia.85.2, s.c. See also *In DA* III.8.
54 In many passages, Aquinas is concerned to rule out the possibility that the intelligible form is itself the object of cognition in ordinary cases of cognition, in which people cognize external particulars. In his recent book *Cognition: An Epistemological Inquiry* (Houston, TX: Center for Thomistic Studies, 1992), Joseph Owens is similarly concerned to show that the direct object of the intellect is not an intelligible form but some extramental object. He is so concerned to rule out the possibility of skepticism, however, that he goes to the other extreme and maintains that for Aquinas there is unmediated awareness of things in the world. Aquinas's position seems to stand somewhere between the position Owens ascribes to him and the position Aquinas himself is ruling out. Owens is right to hold that the object of ordinary intellective cognition is part of extramental reality and not some internal state of the intellect's. But, on the other hand, it takes a process on the part of the intellect to reach the state in which it has cognition of some extramental object, and that process is mediated by intelligible forms. *Pace* Owens, then, an intelligible form is, therefore, the medium between the cognizer and the thing cognized. The nature of Aquinas's position can be seen clearly, e.g., in *QQ* 7.1.1:

> One should know that in intellective vision there can be three sorts of intermediary ... [The second sort of] intermediary is that by which it sees, and this is the intelligible species, which determines the possible intellect and is related to the possible intellect as the species of a rock is related to the eye [which sees the rock] ... Consequently, the first and the second

> [sort of] intermediary do not produce mediated vision, for a person is said to see a rock immediately, although he sees it by means of a species of the rock received in the eye and by means of light.

55 For the difference between an intelligible form and a concept, on Aquinas's views, and the relation between them, see Chapter 8 on the mechanisms of cognition.
56 *QQ* 7.1.3, obj. 3.: "quamvis nihil recipiat, tamen formam quam apud se habebat prius, applicat ad particulare quod de novo fit"; ad 3: "applicatio illa est intelligenda per modum illum quo Deus ideas ad res cognoscendas applicat, non sicut medium cognoscibile ad aliud, sed sicut modus cognoscendi ad rem cognitam."
57 *ST* Ia.14.5.
58 In putting the point this way, I am simplifying for the sake of brevity. Aquinas's account has an additional complexity we cannot examine here. For some idea of the complexity, see *QDV* 2.3 and 4; also *QQ* 7.1.1.
59 *QDV* 2.3.
60 *QDV* 2.3.
61 There is, of course, a parallel problem regarding the way an immaterial entity can causally act on a material entity. But this is unlikely to have seemed problematic to a traditional theist such as Aquinas, who believes that an immaterial God causally affects his material creatures.
62 *ST* Ia.84.6.
63 For further discussion of this topic, see Chapter 8 on the mechanisms of cognition.
64 For some comparative discussion of these claims of Aquinas's about the workings of the intellect, see my "Ockham on Sensory Cognition", in Paul Spade (ed.), *The Cambridge Companion to Ockham* (Cambridge: Cambridge University Press, 1999), pp. 168–203.
65 For further discussion of these metaphysical views of Aquinas's, see Chapter 1 on Aquinas's theory of things.
66 *QQ* 7.1.3.
67 *QDV* 2.5. See also *QDV* 10.4.
68 *In DA* II.12.377.
69 *ST* Ia.85.1.
70 *In DA* III.8.712–13. See also, e.g., *ST* Ia.86.1 and Ia.85.1.
71 *QDV* 10.4. See also *QDV* 10.5 and 2.5–6.
72 For a clear and helpful statement of the nature of God's primary causality in its relation to a secondary cause, see *SCG* I.68, where Aquinas says:

> The control (*dominium*) which the will has over its own acts, by means of which there is in the will the power to will or not to will, excludes the determination of the power to one thing and [also] the violence of a cause which acts [on the will] from outside [the willer]. But it does not exclude the influence of a superior cause, from which the will has its being and its function. And so with respect to the motion of the will there remains the causality of the primary cause, which is God.

73 See Chapter 13 on grace and free will. I have also discussed God's causing acts of will in "Sanctification, Hardening of the Heart, and Frankfurt's Concept of Free Will", *Journal of Philosophy* 85 (1988): 395–420. Reprinted in John Martin Fischer and Mark Ravizza (eds), *Perspectives on Moral Responsibility* (Ithaca, NY: Cornell University Press, 1993), pp. 211–234; and "Augustine on Free Will", in

Eleonore Stump and Norman Kretzmann (eds), *The Cambridge Companion to Augustine* (Cambridge: Cambridge University Press, 2001), pp. 124–147.
74 Shanley (1997, p. 205).
75 *ST* Ia.15.2.
76 *ST* Ia.15.1 ad 2. See also *QDV* 3.2.
77 See, e.g., *QDV* 3.1: "ideas latine possumus dicere species vel formas." See also *QDV* 3.3: "idea est ratio rei, vel similitudo."
78 *QDV* 3.3. See also *ST* Ia.15.3 s.c.
79 *ST* Ia.15.1.
80 See, e.g., *ST* Ia.15.2.
81 *ST* Ia.14.8.
82 *QDV* 3.3. See also *QDV* 3.1.
83 *QQ* 7.1.3.
84 *ST* Ia.14.8 ad 3.
85 *SCG* I.66.
86 *QDP* 16.7 In our article "Eternity, Awareness, and Action" (*Faith and Philosophy* 9 [1992]: 463–482), Norman Kretzmann and I discuss some of the problems associated with epistemic and causal relationships between an eternal being and temporal beings.
87 *QDV* 10.4. See also *QDV* 3.1.
88 *QQ* 7.1.3 ad 3.
89 For Aquinas's theological understanding of the divine concept or inner word as the second person of the Trinity, see my "Word and Incarnation", in Marco Olivetti (ed.), *Incarnation* (Padua: Edam, 1999), pp. 543–554.
90 In correspondence Alvin Plantinga has suggested that it is a mistake to look for a mechanism by means of which God knows. He points out that we do not look for a mechanism by means of which God exercises his omnipotence. In the case of divine power we are content just to note that omnipotence enables God to do whatever is at issue, without investigating the means by which an omnipotent being could do what he does. This line has its attractions. It might also explain some of the peculiar slant of Aquinas's discussion of God's knowledge. Aquinas, too, might think there is nothing to discuss regarding the mechanism by means of which God knows, but that what must be discussed is how a simple God could know anything if knowledge requires representations or intelligible forms. If that is Aquinas's view, we should expect to find virtually nothing in his texts on how God applies his representations or makes epistemic contact with things but quite a lot on how a simple God can have intelligible forms in his intellect. So Plantinga's suggestion has some plausibility as the basis for an interpretation of Aquinas's approach. On the other hand, it also looks like a better line with which to end an investigation of God's knowledge than one with which to begin it.
91 *ST* Ia.14.11. See also *ST* Ia.57.1 and Ia.84.1.
92 *QQ* 3.2.3.
93 Shanley (1997, p. 205).
94 *SCG* I.66.550–51.
95 See, e.g., *SCG* 1.67.557. See also *CT* 1.133; *ST* Ia.14.13.
96 *QDP* 16.7.
97 See, e.g., *ST* Ia.14.9 and Ia.14.12; also *QDV* 2.12.
98 See, e.g., *ST* Ia.14.13: "Unde manifestum est quod contingentia et infalliblitier a Deo cognoscuntur, inquantum subduntur divino conspectui secundum suam praecentialitatem."
99 For this *a priori* truth, he also has Aristotelian authority: *De anima* II.11.423b26–424a10 and III.4.429a13–18.

100 See, e.g., *ST* IaIIae.22.1; Ia.79.2.
101 *ST* Ia.97.2.
102 *ST* Ia.79.2.
103 *In DA* III.9.722. See also *SCG* I.16.133: "quod est potentia, nondum est."
104 See note 66 above.
105 It is, of course, possible to suppose that evolution or God has constructed human beings in such a way that their cognitive processing yields reliable information about the world around them. For a critical discussion of such a claim about evolution, see Alvin Plantinga, *Warrant and Proper Function* (Oxford: Oxford University Press, 1993). But attempts to solve the puzzle by pointing to evolution or God's creative activity do not seem to get us very far if what we are interested in is the mechanism by which human cognitive processing is reliably related to what it cognizes.

6 Forms and bodies: the soul

1 Meditation VI, in *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff and Dugald Murdoch (Cambridge: Cambridge University Press, 1984), vol. II, p. 54. In other places, Descartes seems to hold that a complete human being is a compound of body and soul; see, e.g., his reply to objections, in *The Philosophical Writings of Descartes*, vol. II, pp. 299–300. How this position is to be reconciled with the position in the quotation from Meditation VI is not entirely clear; but my interest in this paper is only in the dualism commonly associated with Descartes, regardless of whether or not Descartes himself actually held it. For discussion of the extent to which Descartes held Cartesian dualism, see, e.g., Margaret Wilson, *Descartes* (London: Routledge and Kegan Paul, 1978), pp. 177–185, and Tad Schmaltz, "Descartes and Malebranche on Mind and Mind–Body Union", *The Philosophical Review* 101 (1992): 281–325.
2 *QDSC* un.2.
3 *SCG* II.57.
4 *ST* Ia.89.1. For further discussion, see Chapter 7 on the foundations of knowledge.
5 *QDA* un.9.
6 For further discussion of the metaphysical issues raised here and in subsequent sections in connection with Aquinas's theory of forms, see Chapter 1 on Aquinas's theory of things.
7 See, e.g., *QDA* un.1.
8 *QDA* un.9.
9 *In DA* II.11.226.
10 Cf., e.g., *QDSC* un.3. For a good account of this medieval controversy over substantial forms, see, e.g., Anton Pegis, *St. Thomas and the Problem of the Soul in the Thirteenth Century* (Toronto: Pontifical Institute of Mediaeval Studies, reprinted 1983). See also the discussion in Chapter 1 on Aquinas's theory of things.
11 *ST* Ia.76.1.
12 *QDSC* un.2.
13 See, e.g., Ziwei Huang, Jean-Marc Gabriel, Michael Baldwin *et al.*, "Proposed Three-dimensional Structure for the Cellular Prion Protein", *Proceedings of the National Academy of Sciences*, 91 (1994): 7139–7143.
14 For a very helpful discussion of the history of the notion of emergent properties, see Brian McLaughlin, "The Rise and Fall of British Emergentism", in Ansgar Beckermann, Hans Flohr, and Jaegwon Kim (eds), *Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism* (Berlin: Walter de Gruyter, 1992), pp. 49–93.

15 It is interesting to note that in Samuel Alexander's influential early account of emergent properties, they are identified with configurational patterns and explicitly associated with the historical distinction between matter and form. Alexander says: "To adopt the ancient distinction of form and matter, the kind of existent from which the new quality emerges is the 'matter' which assumes a certain complexity of configuration and to this pattern or universal corresponds the new emergent quality." (Quoted in Timothy O'Connor, "Emergent Properties", *American Philosophical Quarterly* 31 (1994): 91–104. O'Connor's article is a helpful discussion of emergent properties.) For a useful discussion of reasons for preferring one formulation of the notion of emergence over another, see Robert L. Klee, "Micro-determinism and Concepts of Emergence", *Philosophy of Science* 51 (1984): 44–63.
16 Cf., e.g., John Searle, *The Rediscovery of the Mind* (Cambridge, MA: MIT Press, 1992), p. 111.
17 Searle (1992, p. 112).
18 There is some room for ambiguity and confusion here. On some accounts of emergence, e.g., a property of a system is emergent if it could not have been predicted from knowledge of the properties of the parts of the system or if the microstructure of a system does not completely determine the property in question. But it is not entirely clear what is to count as the microstructure of the system or the properties of the parts. In particular, we can be thinking of the properties of the parts in two ways: (i) as the properties of the parts taken *singillatim*, that is, the properties had by the molecule's constituent elementary particles, taken individually, (ii) as the properties the parts in fact have when they are organized into the whole, that is, the properties the constituent elementary particles have in the configuration which the molecule has in its final, biologically active form. I am taking 'properties of the parts' in sense (i) here. In sense (i), it is true to say, as biochemists do, that the folded shape of a protein cannot always be derived from even perfect knowledge of the biochemical properties of the components of the protein, including their causal interactions (since it might be the case that the protein achieves that folded shape only with the help of enzymes, e.g.). It would not be true to say this in sense (ii). If we take 'properties of the parts' in sense (ii), then we smuggle the configuration, or the form of the whole, into the properties of the parts of the whole. In sense (ii), it would be very surprising if there were features of the whole system that were not explainable in terms of or determined by the causal interactions of the parts of the whole, since the features of the system are a function of the configuration of the whole and that configuration is in effect being counted among the properties of the parts.
19 See, e.g., Frederic M. Richards, "The Protein Folding Problem", *Scientific American* 264 (1991): 54–63. According to Richards, for relatively small proteins, folding is a function of the properties and causal potentialities among the constituents of the protein, but "some large proteins have recently been shown to need folding help from other proteins known as chaperonins" (ibid., p. 54). Richards thinks of proteins with 300 or fewer amino acids as small proteins.
20 Whether such an emergent property of a whole system should be counted as supervening on the properties of its components depends, in part, on two things. (The type of supervenience at issue here is what is sometimes called 'multiple domain supervenience'; see, e.g., Jaegwon Kim, "Supervenience for Multiple Domains", reprinted in *Supervenience and Mind* (Cambridge: Cambridge University Press, 1993), pp. 109–130. A helpful formulation of such a supervenience relation

with respect to wholes and parts is given in O'Connor 1994, p. 96). (1) Whether it is possible for the parts to have the properties they have without the whole system's having the emergent feature in question depends on what we think is to be included among the properties of the parts and whether the configuration of the whole is somehow included among them. If we think of the properties of the parts only in sense (i) of note 18 above, then the emergent property will not be supervenient on the properties of the parts, since it is possible for the parts to exist and have those properties without the whole's having the emergent property in question – as would be the case, e.g., if we synthesized a large protein but did not succeed in catalyzing its folding, so that it was not biologically active. (2) Whether it is possible to have the systems feature in question exemplified by different constituents with different properties is at least in part a function of how abstract the description of the systems feature at issue is. Being able to regulate genes is one thing; being able to regulate genes by fitting a leucine zipper of such-and-such a size into the major groove of a DNA helix is another. The intuitive idea behind supervenience is that the supervenient property is dependent upon and determined by the subvening properties. My point here is that whether or not we have such dependence and determination in the case of emergent properties depends, among other things, on whether or not the configuration of the whole is tacitly included among the properties of the parts and on the specificity with which we pick out the supervenient property.

21 Giving a principled distinction between configurations of material components that combine their components into one thing from those that bring the components together without combining them into one thing is difficult. (For a good account of the problems, see Peter van Inwagen, *Material Beings* (Ithaca, NY: Cornell University Press, 1990). It is not clear to me that Aquinas has the resources for giving an adequate distinction of this sort, but see, e.g., *In Meta* VII.17.1672–1674. There Aquinas says that in cases in which the composite is one thing, the composite is not identical with its components; rather the composite is something over and above its components.

22 *In Meta* VII.17.1673–1674.

23 For a helpful discussion of the general problem of reductionism relevant to the issues considered here, see Alan Garfinkel, "Reductionism", in Richard Boyd, Philip Gasper, and J.D. Trout (eds), *The Philosophy of Science* (Cambridge, MA: MIT Press, 1993), pp. 443–459. Garfinkel argues against reductionism by trying to show that reductive microexplanations are often not sufficient to explain the macrophenomena they are intended to explain and reduce. He says:

> A macrostate, a higher level state of the organization of a thing, or a state of the social relations between one thing and another can have a particular realization which, in some sense, "is" that state in this case. But the explanation of the higher order state will not proceed via the microexplanation of the microstate which it happens to "be". Instead, the explanation will seek its own level.
>
> (ibid., p. 449)

Aquinas would agree, and Aquinas's account of the relation of matter and form in material objects helps explain Garfinkel's point. In Aquinas's terminology, a biological system has a form as well as material constituents, so that the system is not identical to the material constituents alone; and some of the properties of the system are a consequence of the form of the system as a whole. Garfinkel himself recognizes the aptness of the historical distinction between matter and form for his

argument against reductionism. He says, "the independence of levels of explanation ... can be found in Aristotle's remark that in explanation it is the form and not the matter that counts" (1993, p. 149). See also Philip Kitcher, "1953 and All That: A Tale of Two Sciences", in *The Philosophy of Science*, op. cit., pp. 553–570. Kitcher, who rejects reductionism in biology, argues for the strongly anti-reductionist claim that sometimes descriptions of higher-level processes are needed to explain events at a lower level.

24 For an interesting contemporary argument against the reduction of wholes to their parts, see Peter van Inwagen, "Composition as Identity", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 8 (Atascadero, CA: Ridgeview Publishing Co., 1994), pp. 207–219.

25 *ST* Ia.3.2.

26 *QDSC* un.1 ad 5.

27 *ST* Ia.54.3 ad 2.

28 *ST* Ia.50.2.

29 In this connection, see also *SCG* II.51.

30 *ST* Ia.50.5.

31 *QDSC* un.1 ad 6.

32 See, e.g., the extensive discussion of angelic knowledge and willing in *ST* Ia.54–60.

33 *ST* Ia.54.5.

34 *ST* Ia.54.5.

35 Cf., e.g., *ST* Ia.75.6.

36 Cf., e.g., *ST* Ia.76.1.

37 See, e.g., *ST* Ia.76.1.

38 See, e.g., *ST* Ia.75.7 ad 3 and *QDA* un.8.

39 *QDSC* un.2 ad 3.

40 *QDSC* un.2 ad 5.

41 Cf., e.g., *ST* Ia.75.3.

42 See, e.g., *QDSC* un.4.

43 *ST* Ia.76.4.

44 *ST* Ia.76.6 ad 1.

45 *ST* Ia.75.1.

46 *ST* Ia.75.5.

47 For some arguments that the soul is simple in the way that a point is, see Philip Quinn, "Tiny Selves: Chisholm on the Simplicity of the Soul", in Louis E. Hahn (ed.), *Roderick M. Chisholm* (Chicago: Open Court Press, 1997).

48 *QDA* un.10 ad 18.

49 *QDA* un.9 ad 14.

50 *QDSC* un.2 ad 16.

51 Aquinas therefore would not agree with Hoffman and Rosencrantz, who define the soul as lacking a spatial location. See Joshua Hoffman and Gary Rosencrantz, "Are Souls Unintelligible?", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 5 (Atascadero, CA: Ridgeview Publishing Co., 1991), p. 183.

52 *ST* Ia.76.8. See also the discussion in *QDA* un.10 and *SCG* II.72.

53 *ST* Ia.78.4.

54 *ST* Ia.75.2 ad 2; emphasis added.

55 *ST* Ia.76.1.

56 Contrast Chisholm here, who uses 'soul' to mean the same thing as 'person'. See Roderick Chisholm, "On the Simplicity of the Soul", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 5, op. cit., p. 167.

57 *ST* Ia.75.4.

58 The possible identification of human agents that Chisholm quickly dismisses, namely, that a human person is his (living) body, is therefore close to the one Aquinas espouses; for Aquinas, the 'is' in that claim must be the 'is' of constitution (see Chapter 1 on Aquinas's theory of things for a discussion of Aquinas's views of constitution and identity). Chisholm's reasons for rejecting this include his mereological essentialism and his conviction that a person could lose a part of his body and still continue to exist. Aquinas shares Chisholm's conviction that a person can persist through the loss of a part of his substance, but he would not accept Chisholm's mereological essentialism for human beings. See Roderick Chisholm, "On the Simplicity of the Soul", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 5, op. cit., p. 168.

59 In some versions of the Porphyrian tree in logic texts, e.g., *'corpus'* is the name for the genus that encompasses all material things, both animate and inanimate.

60 Cf., e.g., *QDSC* un.3 ad 12 and ad 13. The production of a human body is not itself instantaneous; Aquinas does not think that at conception the fetus is a human being.

61 *QDA* un.1 obj.12.

62 *SCG* II.51.

63 Aquinas's general argument for the soul's ability to exist on its own apart from matter depends crucially on the premiss that the soul's operation of intellective cognition is an operation which could not be carried out by any material organ of a body, as vision *is* carried out, on his view, by the eye.

64 *QDSC* un.2.

65 *QDSC* un.2.

66 There are other disanalogies as well. e.g., the enzyme is a substance in its own right; the soul is not.

67 *ST* Ia.65.4.

68 See, e.g., *ST* Ia.90.2.

69 See, e.g., *ST* Ia.118.2.

70 *ST* Ia.90.4.

71 See, e.g., *ST* Ia.76.3 ad 3.

72 *ST* Ia.118.2–3.

73 *ST* Ia.118.2 ad 5.

74 But see also the other issues having to do with the individuation of the soul discussed in Chapter 1 on Aquinas's theory of things.

75 *QDA* un.1 ad 2.

76 Shoemaker gives no indication that he thinks the BST device is person-preserving only in case it transfers brain states instantaneously or that brain states are such that they can be transferred only if the process of transfer takes no time.

77 See Sydney Shoemaker and Richard Swinburne, *Personal Identity* (Oxford: Basil Blackwell, 1984), pp. 108–111.

78 *ST* Ia.75.2 ad 1. It is not entirely clear what Aquinas has in mind with the distinction between a complete and an incomplete substance, but the idea seems to be something like this: the definition of an incomplete substance will include reference to a primary substance, as the definition of a complete substance will not.

79 See *QDA* un.1 corpus and ad 3, and *ST* IaIIae.72.2, where Aquinas says:

> things are found to differ in species in two ways, in one way from the fact that each [of the differing things] has a [different] complete species, as a horse and a cat differ in species, and in another way insofar as difference in species is found in accordance with difference in the degree of some generation or motion, as a building is a complete generation of a house, but the laying of the foundation and the raising of a wall constitute an incomplete species.

See also *In DA* II.1.215.

80 *ST* Ia.75.4 ad 2.

81 *QDSC* un.2 ad 16.

82 *SCG* II.51.

83 *SCG* II.69.

84 Swinburne is therefore mistaken in claiming that on Aquinas's view a soul is itself a substance; see Sydney Shoemaker and Richard Swinburne, *Personal Identity* (Oxford: Basil Blackwell, 1984), p. 32.

85 *QDA* un.1.

86 These are what Aquinas calls 'integral' parts, as distinct from metaphysical parts. For further discussion on the distinction, see Chapter 1 on Aquinas's theory of things.

87 See also *In Meta* VII.17.1679–1680 where Aquinas explains that the form of a material composite is not an element of the composite in the way that its material components are; rather the form is what Aquinas calls a 'principle' of the constitution of the composite.

88 For further discussion of the distinction between metaphysical and integral parts, see Chapter 1 on Aquinas's theory of things.

89 And, of course, the separated soul after death can exert causal influence apart from any connection with or to the matter of its body.

90 Aquinas would therefore not accept the claim that anything which is embodied is necessarily embodied. For interesting arguments that the claim should in fact not be accepted, see Stephen Yablo, "The Real Distinction Between Mind and Body", *The Canadian Journal of Philosophy*, supplementary volume 16 (1990), p. 197.

91 *ST* IIaIIae.83.11.

92 Richard Swinburne asserts that on Aquinas's account there is no memory in the separated soul [*The Evolution of the Soul* (Oxford: Clarendon Press, 1986), p. 306]; but Swinburne is mistaken here. He supports his point by referring to *SCG* II.81.14, where Aquinas says that recollection is not in the separated soul. But in that passage Aquinas goes on to say that the denial of recollection in the separated soul is false if by 'recollection' we mean the understanding of things which the person cognized before (in the embodied state). Whatever exactly Aquinas means by 'recollection' here, then, it is not to be equated with memory in general.

93 *ST* Ia.89.1 and 89.8.

94 *ST* IaIIae.85.5 and 85.6.

95 *SCG* IV.79.

96 What are we to say about the human person here? The question is somewhat difficult to answer just because the contemporary notion of personhood does not map neatly on to medieval concepts; certainly the medieval term *'persona'* is not exactly equivalent to our 'person'. As far as I can see, Aquinas's notion of a human being is as close to our notion of person as anything else in his account of human nature. If this is right, then for Aquinas the person, as it were, falls apart at death. Nonetheless, although the soul is just a part of a person, it is the part that has intellect and will, so that there is a sense in which, on his account, the person survives death, since the person part that is the soul thinks and wills even if it is not a complete person in its own right. (This is no doubt at least part of

the reason why he thinks it is appropriate to call the soul of Peter 'Peter', as he claims we should do in his discussion of prayer to the saints in heaven.) In this sense, the soul is different from other forms of material objects. The form of a cathedral without the matter it configures might be considered a part of the cathedral, in some sense of part, but even if (*per impossibile*) the form somehow survived the dissolution of the form-matter composite that is the cathedral, we would not think the survival of this part of the cathedral counted as the survival of the cathedral. For further discussion of this issue, see Chapter 1 on Aquinas's theory of things.

97 Aquinas's account thus satisfies Chisholm's constraint, which Chisholm thinks is supported by our strong intuitions, that the mind must be a thing of some sort and cannot be identified with anything like a set of properties. (Chisholm, 1991, p. 169). On Chisholm's view, the mind must be a substance. For Aquinas, as I explain, when the mind exists in its disembodied state in the separated soul, it is a subsistent thing but still only a part of a substance, like a severed hand, and not a whole substance in its own right.

98 Stephen Yablo says that any "substance dualism worthy of the name maintains at least that (1) I am not identical to my body" ("The Real Distinction Between Mind and Body", in *The Canadian Journal of Philosophy*, supplementary volume 16 (1990), p. 150). Whether or not Aquinas meets this test for substance dualism depends on how (1) is understood. If we take (1) literally as it stands (and this is how Yablo himself interprets it), then Aquinas accepts it, since in some sense the corpse of a person also counts as that person's body. On the other hand, if we are to understand 'body' in (1) as referring to a living human body, then Aquinas would reject (1) since he thinks that a human being is the matter-form composite of a living human body.

99 Dennett (1991, pp. 33–37).

100 Sydney Shoemaker, *Identity, Cause, and Mind* (Cambridge: Cambridge University Press, 1984), p. 141.

101 Patricia Churchland, *Neurophilosophy. Toward a Unified Science of the Mind/Brain* (Cambridge, MA: MIT Press, 1990), p. 352.

102 This is admittedly a very restricted sense of 'physicalism'. For some attempt to clarify the different senses of 'physicalism' in current use, see Howard Robinson (ed.), *Objections to Physicalism* (Oxford: Clarendon Press, 1993).

103 Richard Boyd, "Materialism without Reductionism: What Physicalism Does Not Entail", in Ned Block (ed.), *Readings in Philosophy of Psychology*, vol. 1 (Cambridge, MA: Harvard University Press, 1980), p. 85.

104 Boyd (1980, p. 88).

105 Boyd (1980, p. 88).

106 Boyd (1980, p. 97).

107 Boyd in fact qualifies this thesis with a distinction between narrow and broad construals of the scope of states, events, and processes; but this distinction does not alter his general point and is not relevant to the issues at hand.

108 Boyd asserts this claim with very little argument; for considerable careful and interesting argument for the claim, see Stephen Yablo, "The Real Distinction Between Mind and Body", *The Canadian Journal of Philosophy*, supplementary volume 16 (1990): 149–201.

109 Boyd (1980, p. 101).

110 Boyd (1980, p .85).

111 Boyd (1980, p. 97).

112 Unless I have misunderstood Boyd and he thinks it is possible for there to be functioning mental phenomena existing on their own apart from both a body and a mind. Something similar to or even identical with such a peculiar theory

seems to be held by N. M. L. Nathan, who says, "A person could be a series of volitions connected causally or by their contents, or ... a single continuous activity in which all succession and variety belongs to the content of that activity" (see his "Weak Materialism", in Howard Robinson, 1993, p. 223).

113 Furthermore, Boyd like Aquinas takes configurational events, states, or processes as dynamic, since he supposes that such dynamic conditions as information-processing are configurational.

114 For someone who sees positions such as Boyd's as dualist, see Stephen Yablo (1990, p. 151) (where Yablo describes the claim that a human mind could have existed in the absence of all material objects a "genuinely challenging form of dualism") and "Mental Causation", *The Philosophical Review* 101 (1992): 246.

115 This is the sense of materialism Howard Robinson has in mind when he says, "One could, e.g., have a materialist or physicalist theory of man and hence of the human mind, whilst believing in the existence of non-human immaterial spirits" (Robinson, 1993, p. 2).

116 See John Searle (1992, p. 28).

117 Searle (1992, p. 102).

118 For detailed and elaborate consideration of arguments for this conclusion, see David Braine, *The Human Person. Animal and Spirit* (Notre Dame, IN: University of Notre Dame Press, 1992). For arguments that Aquinas's account of the soul occupies a halfway house between dualism and materialism, see Brian Davies, *The Thought of Thomas Aquinas* (Oxford: Clarendon Press, 1992). Davies's discussion is very helpful, but a better way to describe Aquinas's position, in my view, is as showing the mistakenness of the dichotomy between materialism and dualism.

119 And if it is logically possible for disembodied minds to exist and function, then on Aquinas's understanding of omnipotence, God can bring about such a state in this world.

7 The foundations of knowledge

1 *Reason Within the Bounds of Religion* (Grand Rapids, MI: Eerdmans 1984), 2nd edn, p. 30. Wolterstorff has since altered his view; see "The Migration of the Theistic Arguments: From Natural Theology to Evidentialist Apologetics", in Robert Audi and William Wainwright (eds), *Rationality and Religious Belief* (Ithaca, NY: Cornell University Press, 1986), pp. 38–81.

2 "Reason and Belief in God", in Alvin Plantinga and Nicholas Wolterstorff (eds), *Faith and Rationality: Reason and Belief in God* (Notre Dame, IN: University of Notre Dame Press 1983), p. 48. For Plantinga's later views, however, see *Warrant: The Current Debate* (Oxford: Oxford University Press, 1983), pp.183–184, and *Warranted Christian Belief* (Oxford: Oxford University Press, 2000), pp. 167–186.

3 Plantinga (1983, p. 52).

4 Plantinga (1983, pp. 55–57).

5 For Plantinga's theory of knowledge, see his trilogy on warrant: *Warrant: The Current Debate* (Oxford: Oxford University Press, 1993); *Warrant and Proper Function* (Oxford: Oxford University Press, 1993); and *Warranted Christian Belief* (Oxford: Oxford University Press, 2000).

6 Plantinga (1983, p. 62).

7 *Theory of Knowledge* (Boulder, CO: Westview Press, 1990), p. 62.

8 Oxford: Clarendon Press, 1988.

9 Irwin (1988, pp. 130–131).

10 Irwin (1988, p. 134).

11 Irwin (1988, p. 197); see also pp.139–141, 148–150, 315, 318, 326, 482–483.
12 Irwin (1988, p. 473).
13 For a different interpretation of the nature and purpose of Aristotle's *Posterior Analytics*, see, e.g., Jonathan Barnes, "Aristotle's Theory of Demonstration", in Jonathan Barnes, Malcolm Schofield, and Richard Sorabji (eds), *Articles on Aristotle* (London: Duckworth, 1975), pp. 65–87.
14 Wolterstorff (1984, pp. 24–25); cf. also p. 36.
15 Lehrer (1990, p. 42).
16 Lehrer (1990, p. 40).
17 *In PA* II.1 [408].
18 *In PA* proemium. (In places where it might be particularly helpful for scholarly readers, I have also included in square brackets the number in the Marietti edition of the paragraph in which a quotation can be found. Also, because of the nature of the controversy at issue in this chapter, I have frequently included in footnotes the Latin text for short quotations. It would, of course, have been good to give the Latin for all the quoted passages everywhere in this book, but considerations of space rule out doing so.)
19 *In PA* I.4.
20 *In PA* I.35.
21 *In PA* II.20.
22 *In PA* I.4:

> *scientia* ... quae per demonstrationem acquiritur, procedat ex propositionibus veris, primis et immediatis, id est quae non per aliquod medium demonstrantur, sed per seipsas sunt manifestae (quae quidem immediatae dicuntur, in quantum carent medio demonstrante; primae autem in ordine ad alias propositiones, quae per eas probantur).

23 *In PA* II.20.
24 Cf., e.g., *In PA* proemium; I.9.
25 *In PA* I.42.
26 *In PA* I.1.
27 *In PA* I.20; see also II.2.
28 *In PA* I.5 and I.9.
29 *In PA* I.16.
30 *ST* Ia.79.9; *In PA* I.4, I.16: "neque demonstratio, neque *scientia* est corruptibilium." Aquinas does think that we have *scientia* of the natural world, but we have it in virtue of the fact that we have *scientia* of the universal causes which operate in nature. See, e.g., *In PA* I.42.
31 *In PA* I.16.
32 *In PA* II.1: "ea quae quaeruntur sunt universalia, sicut et ea quae sciuntur."
33 *In PA* I.11.
34 *In PA* I.44 [396]: "ponit duo ad eam pertinere: quorum unum est quod sit universalis. Non enim *scientia* est de singularibus sub sensu cadentibus"; [397] "praeter vera necessaria, quae non contingunt aliter se habere, sunt quaedam vera non necessaria, quae contingit aliter se habere. Manifestum est autem ex praedictis, quod circa huiusmodi non est *scientia*."
35 Cf., e.g., *ST* Ia.86.1 and 86.3
36 *ST* Ia.87.1.
37 It is true that sometimes Aquinas uses '*scientia*' in a very broad sense. So, e.g., in *ST* IIIa.9.1, speaking about the knowledge of the incarnate Christ, Aquinas says, "here we are taking '*scientia*' broadly for any cognition of the human intellect." But it is clear that, in general, Aquinas uses the term in a much more restricted sense, and that is why his claims about what a human person cognizes by intellect or sense are different from his claims about *scientia*.
38 In fact, there are some passages in which Aquinas uses '*cognitio*' in a way that would not allow '*cognitio*' to be translated 'knowledge': as, e.g., when he occasionally talks of a false cognition.
39 *In PA* I.4 [32]: "scire aliquid est perfecte cognoscere ipsum."
40 *In PA* I.13 [116]: "scire est causam rei cognoscere"; see also I.4 and I.42.
41 *In PA* II.1: "causa est medium in demonstratione, quae facit *scire*."
42 For a discussion of this part of medieval logic, see my *Dialectic and Its Place in the Development of Medieval Logic* (Ithaca, NY: Cornell University Press, 1989).
43 In this connection, see especially *QDVC* 7.
44 *In PA* I.44; cf. also *ST* IaIIae.57.1–4.
45 *QDVC* 7.
46 Cf. *In Meta* I.11.34; see also *In NE* VI.11–6.
47 Technically speaking, it requires *two* divisions to accomplish the distinction between the dispositions of the speculative intellect and those of the practical intellect, because differentiae in a Porphyrian tree always come in pairs of contrary opposites. The same technical point applies to the rest of the discussion of this putative Porphyrian tree.
48 "Highest cause" is the phrase Aquinas uses in his description of wisdom; 'most fundamental cause' is what we would be inclined to say. For some discussion of this issue, see Chapter 11 on wisdom.
49 *ST* Ia.17.2.
50 For a discussion of the processes of sensory cognition and the proper objects of sense cognition, see Chapter 8 on the mechanisms of cognition.
51 *ST* Ia.17.2 ad 1:

> non decipiamur in judicio quo judicamus nos sentire aliquid. Sed ex eo quod sensus aliter afficitur interdum quam res sit, sequitur quod nuntiet nobis rem aliter quam sit aliquando. Et ex hoc fallimur per sensum circa rem, non circa ipsum sentire.

52 For the distinction between common principles and proper principles, see, e.g., *In PA* I.17, I.18, I.43.
53 For this distinction, see, e.g., *In PA* I.4, I.5.
54 *In PA* I.27 [222 – 224].
55 *In PA* I.19.
56 *In PA* I.27 [223].
57 *In PA* I.19 [161]: "nihil est adeo verum, quin voce possit negari. Nam et hoc principium notissimum, quod non contingat idem esse et non esse, quidam ore negaverunt."
58 *SCG* I.11:

> simpliciter quidem Deum esse per se notum est: cum hoc ipsum quod Deus est, sit suum esse. Sed quia hoc ipsum quod Deus est mente concipere non possumus, remanet ignotum quoad nos. Sicut omne totum sua parte maius esse, per se notum est simpliciter: ei autem qui rationem totius mente non conciperet, oporteret esse ignotum.

59 *In PA* I.43:

> non possunt esse aliqua principia communia, ex quibus solum omnia syllogizentur ... quia genera entium sunt diversa, et diversa sunt principia quae sunt solum quantitatum principia, ab his quae solum sunt principia qualitatum: quae oportet coassumere principiis communibus ad concludendum in qualibet materia.

60 *In PA* I.43 [388]: "principia non sunt multum pauciora conclusionibus".
61 Cf., e.g., *In PA* I.4 [42]: "demonstrationis propositiones sint causae conclusionis, quia tunc scimus, cum causas cognoscimus"; [43] "Ex singularibus autem quae sunt in sensu, non sunt demonstrationes, sed ex universalibus tantum, quae sunt in intellectu."
62 Cf., e.g., *In PA* I.10; II.9.
63 *In PA* I.30:

> demonstratio procedit ex universalibus; inductio autem procedit ex particularibus. Si ergo universalia, ex quibus procedit demonstratio, cognosci possent absque inductione, sequeretur quod homo posset accipere *scientia*m eorum, quorum non habet sensum. Sed impossibile est universalia speculari absque inductione.

Cf. also, e.g., *In Meta* I.11.
64 *In PA* I.30: "universalia, ex quibus demonstratio procedit, non fiunt nobis nota, nisi per inductionem."
65 *In PA* II.20: "necesse est prima universalia cognoscere per inductionem."
66 *In PA* I.30: "duplex est modus acquirendi *scientiam*. Unus quidem per demonstrationem, alius autem per inductionem."
67 *ST* Ia.101.1.
68 *In PA* II.4: "Ille enim qui inducit per singularia ad universale, non demonstrat neque syllogizat ex necessitate."
69 *In PA* II.4 [445], "ita se habet in via divisionis, sicut et in via inductionis .... Cum enim aliquid syllogistice probatur, necesse est quod conclusio sit vera, praemissis existentibus veris. Hoc autem non accidit in via divisionis."
70 *In PA* I.12: "quod non accidat in demonstratione peccatum, oportet non latere quod multoties videtur demonstrari universale, non autem demonstratur."
71 *In PA* proemium: "Est enim aliquis rationis processus necessitatem inducens, in quo non est possibile veritatis defectum; et per huiusmodi rationis processum scientiae certitudo acquiritur."
72 *In PA* I.4: "scientia est etiam certa cognitio rei; quod autem contingit aliter se habere, non potest aliquis per certitudinem cognoscere; ideo ulterius oportet quod id quod scitur non possit aliter se habere."
73 *In PA* I.41 [357].
74 *In PA* I.41 [358].
75 *In PA* I.41 [359].
76 *In PA* I.41 [360].
77 *ST* Ia.91.3:

> omnes res naturales productae sunt ab arte divina .... Sic igitur Deus unicuique rei naturali dedit optimam dispositionem, non quidem simpliciter, sed secundum ordinem ad proprium finem... Finis autem proximus humani corporis est anima rationalis et operationes ipsius... Dico ergo quod Deus instituit corpus humanum in optima dispositione secundum convenientiam ad talem formam et ad tales operationes.

Cf. also *ST* Ia.76.5.
78 *QDA* 8.15: "anima unitur corpori propter intelligere, quae est propria et principalis operatio. Et ideo requiritur quod corpus unitum animae rationali sit optime dispositum ad serviendum animae in his quae sunt necessaria ad intelligendum."
79 *QDVC* 7: "Dicitur enim aliquis intelligens vel sciens secundum quod eius intellectus perfectus est ad cognoscendum verum; quod quidem est bonum intellectus."
80 *ST* Ia.93.2: "solae intellectuales creaturae, proprie loquendo, sunt ad imaginem Dei."
81 *ST* Ia.93.4: "cum homo secundum intellectualem naturam ad imaginem Dei esse dicatur, secundum hoc est maxime ad imaginem Dei, secundum quod intellectualis natura Deum maxime imitari potest."
82 *ST* Ia.93.6:

> Esse ergo ad imaginem Dei pertinet solum ad mentem ... in sola creatura rationali invenitur similitudo Dei per modum imaginis .... Nam quantum ad similitudinem divinae naturae pertinet, creaturae rationales videntur quodammodo ad repraesentationem speciei pertingere, inquantum imitantur Deum non solum in hoc quod est et vivit, sed etiam in hoc quod intelligit.

83 See Chapter 8 on the mechanisms of cognition.
84 Further discussion of faculties other than the senses and the intellect can be found in Chapter 8 on the mechanisms of cognition.
85 *ST* Ia.85.6: "Sensus enim circa proprium objectum non decipitur ... nisi forte per accidens, ex impedimento circa organum contingente."
86 *ST* Ia.17.2: "circa propria sensibilia sensus non habet falsam cognitionem nisi per accidens et ut in paucioribus, ex eo scilicet quod propter indispositionem organi non convenienter recipit formam sensibilem"; cf. also *ST* Ia.17.2 ad 2: "falsitas dicitur non esse propria sensui, quia non decipitur circa proprium objectum."
87 It might occur to someone to wonder how this optimism is compatible with the position in a text cited earlier, in which Aquinas accepts the possibility of falsity in sensory cognition. The optimism about the senses has to do just with the reception by a sense of its proper object. Senses also have common objects and accidental objects, and with regard to these falsity is possible even in an otherwise properly functioning sense organ (cf., e.g., *ST* Ia.17.2). In addition, judgment based on the senses' reception of their object, which is propositional, involves intellect's operation on sensory information, and error in such perceptual judgments is also possible.
88 *ST* Ia.85.6: "Obiectum autem proprium intellectus est quidditas rei. Unde circa quidditatem rei, per se loquendo, intellectus non fallitur."
89 *ST* Ia.85.6 ad 1: "in absoluta consideratione quidditatis rei, et eorum quae per eam cognoscuntur, intellectus nunquam decipitur."
90 *ST* Ia.17.3: "Sicut autem sensus informatur directe similitudine propriorum sensibilium, ita intellectus informatur similitudine quidditatis rei. Unde circa quod quid est intellectus non decipitur: sicut neque sensus circa sensibilia propria."
91 *ST* Ia.94.4: "non poterat esse quod, innocentia manente, intellectus hominis alicui falso acquiesceret quasi vero ... rectitudo primi status non compatiebatur aliquam deceptionem circa intellectum."

92 *QDV* 18.6 s.c.: "omnis error vel est culpa, vel poena: quorum neutrum in statu innocentiae esse poterat. Ergo nec error."

93 *QDV* 18.6:

> sicut verum est bonum intellectus, ita falsum malum ipsius ... si ipsa opinio falsa, sit quidam malus actus intellectus. Unde cum in statu innocentiae non fuerit aliqua corruptio vel aliquod malum, non potuit esse in statu innocentiae aliqua falsa opinio ... ita in intellectu eius nulla falsitas esse potuisset.

94 Both these topics are discussed in detail in Chapter 8 on the mechanisms of cognition.

95 *ST* IIIa.9.4; cf. also *QDV* 20.1 ad 2.

96 Although it has seemed to some contemporary thinkers that a theory of knowledge at least similar to Aquinas's can form part of a non-theistic worldview. For God as the guarantor of the reliability of human cognitive equipment, on the view of some thinkers it is possible to substitute evolution and to suppose that the theory of evolution provides roughly the same support for such a theory of knowledge that Aquinas's theism does. For further discussion cf., e.g., Alvin Plantinga, "An Evolutionary Argument Against Naturalism", *Logos* 12 (1992): 27–49; see also *Warrant and Proper Function* (Oxford: Oxford University Press, 1993), Chapters 11 and 12.

97 Of course, this story will be considerably complicated if we add to it Aquinas's views concerning the effects of sin on the will and his account of the relations between intellect and will, but these additional considerations will only complicate and not undermine the epistemological story I have argued for here.

98 *In PA* II.1 [414]: "Manifestum est enim quod causa est medium in demonstratione, quae facit scire; quia scire est causam rei cognoscere. Causa autem est quod quaeritur in omnibus praedictis quaestionibus."

99 *In PA* I.42:

> Quaedam enim sunt de quibus non quaereremus dubitando, si ea vidissemus; non quidem eo quod scientia consistat in videndo, sed in quantum ex rebus visis per viam experimenti accipitur universale, de quo est scientia. Puta si videremus vitrum perforatum, et quomodo lumen pertransit per foramina vitri, sciremus propter quid vitrum est transparens.

100 *In PA* I.42:

> Ponamus ergo quod aliquis esset in ipsa luna, et sensu perciperet interpositionem terrae per umbram ipsius: sensu quidem perciperet quod luna tunc deficeret ex umbra terrae, sed non propter hoc sciret totaliter causam eclipsis. Illud enim est per se causa eclipsis, quod causat universaliter eclipsim.

101 *In PA* I.42:

> scientia est potior quam sensus. Manifestum est enim quod cognitio quae est per causam, nobilior est: causa autem per se est universalis causa, ut jam dictum est; et ideo cognitio per universalem causam, qualis est scientia, est honorabilis. Et quia huiusmodi universalem causam impossibile est apprehendere per sensum, ideo consequens est quod scientia, quae ostendit

> causam universalem, non solum sit honorabilior omni sensitiva cognitione, sed etiam omni alia intellectiva cognitione, dummodo sit de rebus quae habent causam.

See also *In Meta* I.1.

102 *In PA* II.9 [491]: "medium demonstrationis sit causa."

103 *In PA* II.9 [491]: "per medium demonstrationis omnes hae causae manifestantur; quia quaelibet harum causarum potest accipi ut medium demonstrationis."

104 Paul T. Durbin, trans., *St. Thomas Aquinas. Summa theologiae*, vol. 12 (New York: Blackfriars and McGraw-Hill 1968), p. 82, note a to *ST* Ia.85.7.

105 *ST* Ia.79.8: "ratiocinatio humana, secundum viam inquisitionis vel inventionis, procedit a quibusdam simpliciter intellectis, quae sunt prima principia; et rursus, in via iudicii, resolvendo redit ad prima principia, ad quae inventa examinat."

106 *In PA* proemium [6]:

> Pars autem Logicae, quae primo deservit processui, pars Iudicativa dicitur, eo quod iudicium est cum certitudine scientiae. Et quia iudicium certum de effectibus haberi non potest nisi resolvendo in prima principia, ideo pars haec Analytica vocatur, idest resolutoria.

107 *In PA* proemium [6]:

> Certitudo autem iudicii, quae per resolutionem habetur, est, vel ex ipsa forma syllogismi tantum et ad hoc ordinatur liber *Priorum analyticorum*, qui est de syllogismo simpliciter; vel etiam cum hoc ex materia, quia sumuntur propositiones per se et necessariae, et ad hoc ordinatur liber *Posteriorum analyticorum*, qui est de syllogismo demonstrativo.

108 *In PA* proemium [6]:

> Secundo autem rationis processui deservit alia pars logicae, quae dicitur Inventiva .... Per hiusmodi enim processum, quandoque quidem, etsi non fiat scientia, fit tamen fides vel opinio propter probabilitatem propositionum, ex quibus proceditur ... et ad hoc ordinatur Topica sive Dialectica .... Quandoque vero, non fit complete fides vel opinio, sed suspicio quaedam .... Et ad hoc ordinatur Rhetorica.

109 *In PA* II.9 [497]:

> ponit exemplum de causa movente, tangens quamdam Graecorum historiam: videlicet quod Athenienses quondam, adiunctis sibi quibusdam aliis Graecis, invaserunt Sardenses, qui erant subiecti regi Medorum; et ideo Medi invaserunt Athenienses. Dicit ergo quod quaeri potest propter quid bellum Medorum factum est cum Atheniensibus; et hoc propter quid est causa quare Athenienses impugnati sunt a Medis ... Hoc autem... quod est medium, pertinet ad Athenienses, qui prius bellum inceperunt. Et sic patet quod hic accipitur quasi medium causa quae primo movit.

110 Someone might suppose that an eye-witness to the events could just *see* the Medes making war on the Athenians and so conclude that this example is meant to be a demonstrative syllogism just for such people, but this objection is confused. In the first place, Aquinas presents this example as a demonstrative

syllogism without any indication that it is restricted to people living contemporaneously with the events at issue. Second, much more is involved in the notion of making war than the things an eye-witness to the actions of the Medes could know through self-evident propositions and propositions evident to the senses, as Aquinas's example itself makes clear. The Medes constituted a political entity with a governing structure of some sort; following the conventions of the time, the Medes made an official decision to engage in a series of hostile activities against another political entity, Athens, for a reason deemed weighty enough to warrant the hostility by the officially sanctioned decision-making authority among the Medes. It is because the notion of making war involves conventions of all these sorts that Aquinas accepts as the efficient cause of what the Medes do to the Athenians an action of the Athenians against the Sardinians.

111 Although even so there remains the difficulty of explaining how the premisses of this putative demonstration fit the description of demonstrative premisses – that is, universal, necessary, and so on.

8 The mechanisms of cognition

1 Aquinas's views were themselves one pole around which subsequent storms of discussion swirled. For some discussion of these discussions, see, e.g., Steven P. Marrone, *Truth and Scientific Knowledge in the Thought of Henry of Ghent* (Cambridge, MA: The Medieval Academy of America, 1985), and Katharine Tachau, *Vision and Certitude in the Age of Ockham: Optics, Epistemology and the Foundations of Semantics 1250–1345* (Leiden: E. J. Brill, 1988). See also Katharine Tachau, "The Problem of the *species in medio* at Oxford in the Generation after Ockham", *Mediaeval Studies* 44 (1982): 394–443.

2 Making the rough distinctions given here precise would take considerably more work than is appropriate in this context. e.g., it does not seem sensible to say that wearers of contact lenses see what they see with mediated cognition; it does seem right to suppose that use of an electron microscope produces mediated cognition; and it is hard to be clear about the categorization of cognition resulting from the use of an ordinary light microscope. So 'significant' in this description is an indication of a vagueness that a more precise formulation might succeed in removing.

3 It is only with these provisos that I concur with Joseph Owens's claim that for Aquinas human beings have direct and unmediated cognition of the external world. See Joseph Owens, *Cognition: An Epistemological Inquiry* (Houston, TX: Center for Thomistic Studies, 1992). See also Joseph Owens, "Aristotle and Aquinas on Cognition", in Richard Bosley and Martin Tweedale (eds), *Aristotle and His Medieval Interpreters*, *Canadian Journal of Philosophy*, supplementary volume (Calgary: University of Calgary Press, 1992), pp. 103–123. Owens seems to me to underplay the degree to which Aquinas, like other philosophers, has to take the reliability of human cognitive faculties on trust. For a discussion of Aquinas on the reliability of human cognitive faculties, see the chapter on the foundations of knowledge. See also Norman Kretzmann, "Infallibility, Error, and Ignorance", in *Aristotle and His Medieval Interpreters* (1992b), for an excellent discussion of Aquinas's views on the reliability of human cognitive faculties.

4 The Latin which I have rendered 'similitude' is '*similitudo*' and is usually translated 'likeness'. That translation, however, often leads people into supposing that a *similitudo* is a pictorial representation or that it is supposed to resemble whatever it is a *similitudo* of. These are very misleading impressions. It is better,

in my view, to proceed cautiously here, too, and simply anglicize the Latin, presenting it as a technical term. I have taken the same approach to various other Latin technical terms in this chapter.

5 *In Sent* IV.49.2.1. ad 16:

> creaturae corporales non dicuntur immediate videri, nisi quando id quod in eis est conjungibile visui, ei conjungitur: non sunt autem conjungibiles per essentiam suam ratione materialitatis; et ideo tunc immediate videntur quando eorum similitudo intellectui conjungitur.

I am indebted to Robert Pasnau for this reference.

6 The title of Oliver Sacks's well-known book is taken from such an agnosia case: *The Man Who Mistook His Wife for a Hat*. The visual agnosia patient in that book did see his wife, in some sense, but without seeing her *as* his wife (or even as a human being). See Oliver Sacks, *The Man Who Mistook His Wife For a Hat* (New York: Summit Books, 1985). For a helpful recent study of agnosia, see Martha J. Farah, *Visual Agnosia* (Cambridge, MA: MIT Press, 1990).

7 See, e.g., Eric Kandell, James Schwartz, and Thomas Jessell, *Principles of Neural Science*, 3rd edn (New York: Elsevier, 1991), p. 831.

8 *In DA* II.12.377.

9 *In DA* II.13.384–386.

10 *In DA* II.13.375. See also *In DA* II.5.284, where Aquinas contrasts sense and intellect on this score, that sense is of particular things while intellect has to do with universals.

11 *ST* Ia.78.4.

12 *In DA* II.13.396.

13 *In DA* II.13.398.

14 *ST* Ia.78.4 ad 2.

15 Discovering how the brain achieves integration across processing systems is a pressing problem in contemporary neurobiology, too, and we know much less about it than we would like. Among the little we know so far is that the senses feed into the thalamus and that significant integration of the senses occurs there.

16 See, e.g., *In DA* III.4.633.

17 See, e.g., *SCG* I.55.458.

18 See the discussion of epistemic contact in the chapter on God's knowledge.

19 *QDV* 1.11.

20 In this context, '*species*' is the Latin for form or image rather than the species of a genus.

21 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." ("Mental Representation in Later Medieval Scholasticism", in J.-C. Smith (ed.), *Historical Foundations of Cognitive Science* (Dordrecht: Kluwer Academic Publishers, 1990), pp. 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." (*Aquinas*, Baltimore, MD: Penguin Books, 1955, reprinted 1970), p. 181. And Anthony Kenny tends to translate '*species*' in the intellect as 'ideas' or 'concepts'; see e.g., A. Kenny, *Aquinas on Mind*, (London: Routledge, 1993), pp. 91–92, 94, 96.

22 *In DA* II.24.555.

23 *In DA* II.24.553.

24 See Chapter 1 on Aquinas's theory of things.

25 *QDV* 1.11.
26 *ST* Ia.85.2 s.c.
27 *ST* Ia.78.4.
28 For interesting arguments to a conclusion opposed to my interpretation, see Robert Pasnau's *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997).
29 Cf. Chapter 1 on Aquinas's theory of things.
30 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 the last section of this chapter.
31 Someone might suppose that the form of a stone could be received naturally or materially in matter without producing a stone; e.g., a stone might be pressed into mud, thereby bringing it about that the mud receives the form of the stone, but it nonetheless would not be the case that the mud becomes a stone. But this objection confuses the medieval notion of form with the notion of shape. Form is not shape, but rather, as I explained above, the configurational state of a thing. If the whole configurational state of the matter of a stone were received naturally or materially in the matter of mud, it would produce a stone; otherwise the matter of the mud would not have the form of the stone with natural or material reception. For the same reason, even a cleverly made styrofoam replica of a stone in some museum display would not count as having the configuration of the stone. It may have some of the shape and coloring of the stone, but the configuration of the matter of the stone does not consist in just the stone's shape and color.
32 *In DA* II.14.418.
33 See, e.g., *ST* Ia.84.1.
34 *In DA* II.24.553.
35 Aquinas tends to use 'immaterial', 'intentional', and 'spiritual' roughly synonymously to refer to this kind of change or reception of form.
36 *ST* Ia.78.3.
37 *In DA* II.14.418.
38 See, e.g., S. M. Cohen, "St. Thomas Aquinas on the Immaterial Reception of Sensible Forms", *The Philosophical Review* 91 (1982): 193–209; John J. Haldane, "Aquinas on Sense-Perception", *The Philosophical Review* 92 (1983): 233–239; and Paul Hoffman, "St. Thomas Aquinas on the Halfway State of Sensible Being", *The Philsophical Review* 99 (1990): 73–92.
39 *In DA* II.12.377.
40 *QDV* II.5 ad 2.
41 *In DA* II.24.555.
42 See *In DA* II.14.418, where Aquinas 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.
43 *In DA* II.15.432.
44 The media for sound, e.g., are discussed in *In DA* II.16.445; the media for taste and touch are discussed in the same work in II.21.502–508; and media for smelling as well as the other senses are discussed in II.23.532–544.
45 *In DA* II.21.502. Aquinas is right on this score, of course, since neurons of touch are located within and not at the outer extremity of the skin.
46 *In DA* II.20.493–495.
47 *ST* Ia.4.3; see also *QDV* 8.8 ("there is a similitude between two things insofar as there is agreement in form")
48 *QDV* 2.3 ad 9.

49 *SCG* II.46.1234.
50 *ST* Ia.12.9.
51 *ST* Ia.79.4 ad 3.
52 *ST* Ia.84.7.
53 *ST* Ia.79.4 ad 4; see also Ia.84.7 ad 2.
54 *ST* Ia.85.1 ad 3.
55 *SCG* II.59.1365.
56 *In DA* III.5.641.
57 *In DA* III.6.657.
58 *In DA* II.4.265; see also III.12.792. I am grateful to Robert Pasnau for calling this passage to my attention.
59 *In DA* III.4.632.
60 *In DA* III.6.668.
61 *In DA* III.6.656.
62 *In DA* III.5.644.
63 *In DA* III.4.633.
64 *In DA* III.5.641.
65 *In DA* III.6.664–665.
66 *ST* Ia.84.7.
67 *In DA* III.4.634.
68 *DSC* 9.
69 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" (1992, p. 125).
70 Aristotle's understanding of phantasia has been the subject of considerable recent discussion; see, e.g., Anne Sheppard, "Phantasia and Mental Images: Neoplatonist Interpretations of *De anima*, 3.3" in Julia Annas (ed.), *Aristotle and the Later Tradition*, Oxford Studies in Ancient Philosophy, supplementary volume (Oxford: Clarendon Press, 1991), pp. 165–174, 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" (ibid., p. 171) and phantasia's connection with mental images.
71 See, e.g., *ST* Ia.79.6 and *SCG* II.74.1528 and *QDV* 10.2.
72 See, e.g., Sacks (1985, pp. 154–157). Sacks describes a man who had an organic amnesia for a macabre murder he himself had committed but whose memories of the deed were released by a severe head injury. Sacks says, "The murder, the deed, lost to memory before, now stood before him in vivid, almost hallucinatory, detail. Uncontrollable remniscence welled up and overwhelmed him – he kept 'seeing' the murder, enacting it; again and again" (ibid., p. 155).
73 Kandell *et al.* (1991, p. 831).
74 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).
75 For a good discussion of medieval accounts of compounding and dividing, see Norman Kretzmann, "*Sensus compositus, sensus divisus*, and propositional attitudes", *Medioevo* 7 (1981): 195–229.

76 It should be said, however, that Aquinas supposes we may need to rely on examples involving concrete particulars even when we are thinking about the abstract natures which constitute science (*ST* Ia.84.7).
77 *ST* Ia.84.7 ad 3.
78 Unlike English, Latin has a verb form cognate with 'intellect'; in Aquinas's Latin, the intellect "intelligizes" things, and its objects are intellected things. I have made do in this chapter with 'understand' and its variations as a rendering of Aquinas's 'intelligize' and its forms, although on occasion, for the sake of clarity, I have translated it as 'intellectively cognize' and have used the term 'intellected' as an adjective in place of 'understood'.
79 *ST* Ia.85.2.
80 *ST* Ia.85.2.
81 *ST* Ia.85.2.
82 *ST* Ia.85.2.
83 *ST* Ia.85.5 ad 3.
84 See, e.g., *ST* Ia.85.1: "one must say that our intellect understands material things by abstracting from phantasms"; also ad 1: "And this is abstracting a universal from a particular, or an intelligible species from phantasms, namely, considering the nature of a species without consideration of the individual principles, which are represented by the phantasms."
85 See, e.g., *ST* Ia.84.6.
86 If Aquinas's view here seems odd, it might be reassuring to notice that a somewhat similar claim is made by modern neurobiology. A recent text, e.g., reports that "the occipital lobe receives input from the eyes, and hence it processes visual information." The seen object acts on the eyes to produce "input", but that input is itself acted upon by the occipital lobe, which "processes" it. And, from a neurophysiological point of view, the efficient causation exercised by extramental things underdetermines cognition: "the same information is treated in different ways in different parts of the brain ... Thus, although the kind of information sent to a network restricts what it can do, the input alone does not determine what a network computes" (Stephen Kosslyn and Oliver Koenig, *Wet Mind: The New Cognitive Neuroscience* (New York: Macmillan, 1992), p. 33).
87 In fact, it seems Aquinas was wrong about the passivity of sensory cognition. Even so simple an act of sensory cognition as registering a color turns out to require a great deal of active processing by more than one brain center. For an excellent account of color vision, see Semir Zeki, *A Vision of the Brain* (London: Blackwell Scientific Publications, 1993).
88 For an account of this theory in Averroes and the related theory in Avicenna, see Zdzislaw Kuksewicz, "The Potential and the Agent Intellect", and "Criticisms of Aristotelian Psychology and the Augustinian-Aristotelian Synthesis" in Norman Kretzmann, Anthony Kenny and Jan Pinborg (eds), assoc. editor, Eleonore Stump, *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press, 1982), pp. 595–602 and 623–628. For an account of Aquinas's relation to the medieval tradition, including his reaction to Arabic accounts, see Edward Mahoney, "Sense, Intellect, and Imagination in Albert, Thomas, and Siger", in the same volume.
89 For an introduction to these issues, see Kuksewicz (1982).
90 See, e.g., *ST* Ia.79.4.
91 *ST* Ia.85.8.
92 See, e.g., *In DA* III.8.705–706. For a discussion of natures and their role in Aquinas's metaphysical scheme, see also Chapter 1 on Aquinas's theory of things.
93 *ST* Ia.85.1.

94 *ST* Ia.85.1 ad 1.
95 *ST* Ia.85.1 ad 2.
96 See, e.g., *In DA* III.11.746–760.
97 *QDV* 10.6 ad 6. Aquinas says very little about the mechanisms of innate cognition. But it is clear that we need not suppose that innate cognition of certain first principles requires innate possession of intelligible *species*. It might be the case that we are "hard-wired" for certain foundational beliefs, but that these beliefs are triggered in us only in certain contexts, when we have acquired the intelligible *species* in question. This is, apparently, the way in which the ability to learn language works. It is hard-wired in us, but it is activated only in certain social environments; feral children raised without the experience of language become permanently unable to learn language, although the ability to learn language is clearly an innate human cognitive capacity.
98 *ST* Ia.79.5 ad 3.
99 Although the analogy is only a rough one, since the external senses are passive and the intellect is active in the reception of *species*.
100 A very helpful account of the entire, complicated notion of intention in Aquinas's thought can be found in Robert W. Schmidt, *The Domain of Logic According to St. Thomas Aquinas* (The Hague: Martinus Nijhoff, 1966). I am also indebted to Schmidt's book for calling my attention to various texts useful for my purposes here which I might otherwise have overlooked. I am grateful to Robert Pasnau for making me aware of the relevance of this book for a study of Aquinas's account of cognition.
101 See, e.g., *ST* Ia.85.2 ad 3.
102 *SCG* I.53.443.
103 *SCG* I.53.444.
104 *SCG* IV.11.3473.
105 *SCG* IV.11.3466.
106 I say 'seem' here because, of course, it is possible that such patients have intelligible *species* but are not able to process them into intentions. In such a case, patients with severe dementia would be like agnosia patients, but unlike typical agnosia patients, they would be agnosic for all senses. Although this is possible, it does not seem to me a plausible way to think of dementia. A globally agnosic patient would nonetheless retain a good deal of what we think of as intelligence. She would be able, e.g., to think about the Pythagorean theorem; she would be able to sing to herself old songs she used to listen to; and so on. But demented patients certainly seem to have no capacities of this sort.
107 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.
>
> (*Aquinas on Mind*, London: Routledge, 1993, p. 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.

108 See, e.g., John Heil, "Perceptual Experience" and Fred Dretske's response, "Perception: Heil", in Brian McLaughlin (ed.), *Dretske and His Critics* (Oxford: Blackwell, 1991), pp. 1–16 and 180–184.
109 *ST* Ia.84.7.
110 *ST* Ia.85.5.
111 See, e.g., *ST* IaIIae.90.1 ad 2, where Aquinas talks about three operations of the speculative reason. In my example Hannah is engaged in practical reasoning, but Aquinas speaks of syllogisms and arguments in practical reasoning also.
112 Of course, in the act of answering the question "What is that?", Hannah is engaged at least in the second operation of the intellect, compounding, since in the context her answer is, implicitly, "That is a cat".
113 Someone might object that there is a confusion here, since intellect is said to be able to apprehend such features of the cat as size and color, but such an objection would be mistaken. It is true that color and size and similar characteristics are received primarily by the senses. But there is an intellectual apprehension of such properties which even a person in Tom's condition, temporarily deprived of sensory powers, is able to have. Color is, of course, apprehended differently by the senses and by the intellect. The intellect apprehends the universal; the senses apprehend this particular color. This is the sort of thing Aquinas has in mind, I think, when he says, e.g., that the intellect can apprehend flesh and bones, but the senses apprehend *this* flesh and *these* bones. (*ST* Ia.85.1 ad 2.)
114 We might wonder, however, whether a human cognizer (such as Aquinas) could not cognize a material individual (say, Aristotle) with whom he had never had any sensory epistemic contact. This question is, of course, tied to the difficult question about what individuates. If, as Aquinas tends to say, matter individuates, then someone who has no epistemic contact with the matter that constitutes Aristotle also has no epistemic contact with that individual. The most that can be said in that case is that someone such as Aquinas knows about Aristotle, or knows descriptions of Aristotle; he may know who Aristotle is, but he does not know Aristotle. On the other hand, if a conglomeration of accidents individuates, then someone who knows all (or, at any rate, enough) of those accidents will know the individual, even though the accidents are all universals. Because Aquinas does not accept the view that accidents can individuate, he maintains that intellect by itself cannot know a material individual directly. (But Aquinas's views of the nature of the individuation of material objects is subtle, and I am glossing over some complexities here.) I am grateful to Norman Kretzmann for calling this problem to my attention.
115 *ST* Ia.86.1.
116 *In DA* III.8.712–713.
117 *QDV* 10.6 ad 7.
118 *QDV* 10.4.
119 *QDV* 2.5 ad 17.
120 For an example of such a conflation in an otherwise helpful book, see, e.g., François-Xavier Putallaz, *Le Sens de la Reflexion chez Thomas D'Aquin* (Paris: Librairie Philosophique J. Vrin, 1991), p. 119: "*l'intellect* dans son acte d'abstraction ou d'apprehénsion, n'atteint pas d'abord le singulier comme tel: par lui, l'homme connaît la quiddité abstraite des objets matériels donnés dans la perception." This discussion concludes with the remark: "*L'homme* jouit ainsi d'un pouvoir de connaissance indirecte et imparfaite du singulier" (p. 121; emphasis added).
121 *ST* Ia.12.9.
122 *QDV* 8.5.

123 *In DA* III.13.789.
124 *In DA* III.13.789.
125 Owens 1992, p. 114.
126 Whether this would be a good explanation or not is a matter of some controversy. See, e.g., Alvin Plantinga, "An Evolutionary Argument Against Naturalism", *Logos* 12 (1992): 27–49.
127 Those inclined to find this claim exaggerated should consult, e.g., the highly vituperative reviews by Ned Block, of Daniel Dennett's *Consciousness Explained*, and by Daniel Dennett, of John Searle's *The Rediscovery of the Mind*, both in *The Journal of Philosophy* 90 (1993): 181–204.
128 In working on this chapter, I have benefited greatly from Robert Pasnau's *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997). My views differ from those of Pasnau's in many ways, but I learned a great deal from reading his work.

9 Freedom: action, intellect and will

1 It, however, is true that some recent discussion of the will shows signs of moving in the direction of such a conception without any explicit trace of an association with (or even awareness of) Aquinas's account. See, e.g., the following seminal papers, which have generated considerable discussion in the literature: Harry Frankfurt, "Freedom of the Will and the Concept of a Person", *Journal of Philosophy* 68 (1971): 5–20; Gary Watson, "Free Agency", *Journal of Philosophy* 72 (1975): 205–220; Susan Wolf, "Asymmetric Freedom", *Journal of Philosophy* 77 (1980): 151–166. For one of the most detailed developments of this line of thought in the current literature, see John Martin Fischer and Mark Ravizza, *Responsibility and Control: A Theory of Moral Responsibility* (Cambridge: Cambridge University Press, 1998).
2 As I will discuss further in this chapter, by 'libertarians' I understand those who hold that human beings have freedom with regard to mental and bodily acts but that that freedom is incompatible with determinism.
3 Aquinas was not alone in the thirteenth century in taking such an attitude towards the will. For a discussion of thirteenth-century attitudes towards the will and its relations to intellect, see Bonnie Kent, *Virtues of the Will: The Transformation of Ethics in the Late Thirteenth Century* (Washington, DC: The Catholic University of America Press, 1995), esp. Chapters 3 and 4. I am not always in agreement with Kent's interpretation of Aquinas, but her exposition of the history of discussions of the will in the thirteenth century is helpful and interesting.
4 See, e.g., Klaus Riesenhuber, "The Bases and Meaning of Freedom in Thomas Aquinas", *Proceedings of the American Catholic Philosophical Association* 48 (1974): 99–111; Riesenhuber says, "Aquinas' later writings (after 1270), especially *De malo*, q.6 ..., contain a rather unobtrusive, but thoroughgoing rethinking and new formulation of his teaching on the freedom of the will" (p. 101).
5 In his article "Free Will and Free Choice" in the *Cambridge History of Later Medieval Philosophy* (ed. Norman Kretzmann, Anthony Kenny, Jan Pinborg, associate editor Eleonore Stump, Cambridge University Press, 1981), J. Korolec says:

> The cluster of problems concerning human freedom and action which are discussed by modern and contemporary English-speaking philosophers under the title 'freedom of the will' were discussed in the Middle Ages under the heading *'liberum arbitrium'*. But the Latin expression cannot

> simply be translated by the English one, because it does not contain the Latin word for will (*voluntas*), and it is a matter of debate, among those who believed in the existence of *liberum arbitrium*, whether it was the will, or some other faculty, which was the bearer of the freedom involved in *liberum arbitrium* .... 'Freedom of choice' is probably a less misleading translation of '*liberum arbitrium*'; but here too there is the difficulty that the Latin expression does not contain the technical word for choice (*electio*).
>
> (ibid., p .630)

See also the analogous discussion in David Gallagher, "Thomas Aquinas on the Will as Rational Appetite", *Journal of the History of Philosophy* 29 (1991): 559–584; Gallagher suggests 'free decision' as the least misleading translation (p. 570, n.26). The tendency to confuse *liberum arbitrium* in Aquinas's thought with the contemporary notion of freedom of the will has led some scholars to suppose that Aquinas changed his mind about the nature of free will by the time he wrote *QDM* 6. For a a helpful discussion of this confusion, see Daniel Westberg, "Did Aquinas Change His Mind about the Will?", *The Thomist* 58 (1994): 41–60.

6 For an interesting and helpful account relating human freedom to divine action, see David Burrell, *Freedom and Creation in Three Traditions* (Notre Dame, IN: University of Notre Dame Press, 1993). Cf. also Brian Davies, *The Thought of Thomas Aquinas* (Oxford: Clarendon Press, 1992), pp. 174–178.

7 *ST* IaIIae.10.1 and Ia.82.1.

8 The distinction between referential and attributive uses of linguistic expressions is easier to illustrate than to define. If we say "The President of the United States might have been the son of Chinese immigrants", we might be using the phrase 'the President of the United States' attributively, rather than referentially, to indicate that the position of President could have been filled by a person of Chinese ancestry. If, on the other hand, we were using the phrase referentially, we would be saying that the current president could have had different parents from the ones he had.

9 *ST* Ia.82.4.

10 *ST* Ia.59.1 obj. 3.

11 For a discussion of sensory cognition, see Chapter 8 on the mechanisms of cognition.

12 See, e.g., *ST* Ia.59.1. See also *ST* Ia.93.1; IaIIae.6.1; and *QDV* 24.1.

13 See, e.g., the reference to Aristotle in *ST* Ia.59.1 obj. 1.

14 See, e.g., *ST* Ia.19.1.

15 See *ST* IaIIae.9.1, *ST* Ia.82.4, and *ST* IaIIae.17.1.

16 To say that the will is an efficient cause of bodily motion is not to say that an act of will is sufficient by itself in any and all circumstances to produce bodily motion. Any true generalization that A's are the efficient causes of B's must include a description of a set of conditions, difficult to spell out in its entirety, which needs to hold in order for an A to bring about a B. (For an interesting recent account of causation which helps make this point clear, see Nancy Cartwright, *Nature's Capacities and Their Measurement*, Oxford: Clarendon Press, 1989.) So, e.g., blocked coronary arteries cause heart attacks, unless the heart is being artificially supplied with blood, or the collateral arteries are enlarged through exercise and can supply the heart's needs, and so on. Although the will is the efficient cause of bodily motion, then, an act of will can fail to produce bodily motion if the movement of the body is impeded by some external cause or by some defect in the body itself.

17 Although faith is divinely infused, according to Aquinas, he also seems to suppose that faith results from such an action of the will on the intellect. See, e.g., Aquinas's *QDV* where Aquinas talks of the will's commanding intellect to produce faith; *QDV* 14.3 reply, ad 2, and ad 10. For further discussion of this issue, see Chapter 13 on grace and free will.

18 See *ST* IaIIae.17.1 and IaIIae.17.6. For further discussion of Aquinas's account of the will's control over the intellect, see Chapter 11 on wisdom.

19 In this kind of case, the acts of intellect and will are likely to be tacit, rather than fully conscious. Nonetheless, if we were to ask you why you turned the page just then, your explanation, if you are a self-reflective person, is likely to produce an account of this Thomistic sort.

20 *ST* IaIIae.9.2.

21 *ST* Ia.81.3 and IaIIae.10.3.

22 *ST* Ia.81.3.

23 Cf. *ST* IaIIae.9.1.

24 Cf. *QDM* 6.1, where Aquinas says that even as regards happiness, the *exercise* of the will at a particular time is not necessary since a person can always will on a particular occasion not to think about happiness.

25 In such a case, of course, the intellect is relying on data presented by the senses, as it does in any case in which it cognizes particulars. By 'intellect' in this chapter, I understand the intellect in its full range of functions, including the use it makes of sensory data. For the way in which the intellect makes use of sensory cognition to apprehend particulars, see Chapter 8 on the mechanisms of cognition.

26 See *ST* Ia.82.2.

27 The ultimate good simpliciter is God, on Aquinas's account. Happiness, whose perfection comes in union with God, is the ultimate good for human beings. Hence, the sight of God in the beatific vision also moves the will necessarily.

28 *ST* Ia.82.1.

29 *ST* Ia.82.2.

30 *QDV* 22.12.

31 There is something misleading about talk of the intellect's cognizing or the will's willing. This sort of locution is common in contemporary neuroscience and philosophy of mind, where we read, e.g., that the hippocampus stores and reads maps. Such locutions are misleading, however, insofar as they suggest that components of the mind are homuncular and have cognitive or conative abilities of their own. Aquinas himself recognizes the danger in such locutions; see, e.g., *ST* Ia.75.2 ad 2. Having pointed out the dangers of such locutions, however, I will continue to use them for ease of exposition.

32 *ST* IaIIae.1.4, esp. obj. 3 and ad 3.

33 For a discussion of this problem for contemporary accounts and some examination of the way in which Aquinas's account avoids the problem, see Eleonore Stump, "Sanctification, Hardening of the Heart, and Frankfurt's Concept of Free Will", *Journal of Philosophy* 85 (1988): 395–420; reprinted in John Martin Fischer and Mark Ravizza (eds), *Perspectives on Moral Responsibility* (Ithaca, NY: Cornell University Press, 1993), pp. 211–234.

34 *ST* Ia.82.4; *QDV* 22.12. Cf. also *QDM* 6.1.

35 *ST* IaIIae.17.1.

36 *ST* IaIIae.50.5, IaIIae.52.1, and IaIIae.66.1.

37 Cf., e.g., *ST* IaIIae.17.2 and IaIIae.17.5 ad 1.

38 This distinction is related to the distinction between external and internal actions. For a helpful discussion of this distinction, see David Gallagher, "Aquinas on Moral Action: Interior and Exterior Acts", *Proceedings of the*

American Catholic Philosophical Association 64 (1990): 118–129. A provocative contemporary discussion of the same distinction can be found in Rogers Albritton, "Freedom of Will and Freedom of Action", *American Philosophical Association Proceedings and Addresses* 59 (1985): 239–251.

39 See, e.g., *ST* IaIIae.6.4, and *QDV* 24.1 ad 1. Cf. also *QDM* 6.1 ad 22, where Aquinas says, "he who does what he does not want [to do] does not have free action, but he can have free will."
40 *ST* IaIIae.10.3.
41 *ST* IaIIae.17.1 ad 2.
42 *ST* IaIIae.6.2 and IaIIae.17.5.
43 *ST* IaIIae.6.3 ad 3.
44 *ST* IaIIae.6.1 s.c.
45 *ST* IaIIae.6 proemium.
46 *ST* IaIIae.6.7 ad 3.
47 *ST* IaIIae.6.1.
48 *ST* IaIIae.6.2.
49 *ST* IaIIae.9.6. The exception to this claim about extrinsic principles is God, who can be an extrinsic cause without removing voluntariness since he is the extrinsic cause creating the will with its inclinations and its connections to the intellect. This is the one sort of extrinsic principle which not only does not remove voluntariness but is essential for producing it. (See, e.g., *ST* Ia.105.4 ad 2.)
50 *ST* IaIIae.6.4.
51 *ST* IaIIae.80.3.
52 I discuss the relationship of libertarianism and the ability to do otherwise at some length later in this chapter.
53 Aquinas distinguishes between *actus humanus*, which is a real human action, and *actus hominis*, which is any activity generated by a human being, in, e.g., *ST* IaIIae.1.1.
54 For a good recent analysis of Aquinas's theory of action, including helpful descriptions of the history of the topic in ancient philosophy and earlier medieval philosophy, see Daniel Westberg, *Right Practical Reason. Aristotle, Action, and Prudence in Aquinas* (Oxford: Clarendon Press, 1994). There is some controversy over exactly how many stages are to be found in Aquinas's analysis of action. An older tradition puts the number at twelve; Westberg argues for cutting the number back to eight. I am not persuaded by Westberg's arguments for reducing the number just to eight, and what follows is more in line with the traditional account.
55 *ST* IaIIae.8.3.
56 For Aquinas's distinction between simple volition of an end and the volition of the means for the sake of that end, see, e.g., *ST* IaIIae.8.3.
57 *ST* IaIIae.12.1 ad 4.
58 See, e.g., *ST* IaIIae.15.3.
59 Consider, e.g., 'Therefore choose life' (Deut.30:19), which seems a volition of an end without consideration of means; 'Choose this day whom you will serve' (Josh. 24:15) or 'I have chosen your precepts' (Psalm 119:173), which indicate intentions, acts of will directed at ends (being a servant of God's, being obedient to God's commands) considered as within the power of the willer to achieve by certain means.
60 *ST* IaIIae.15.3 ad 3.
61 And if the body is normal in normal circumstances, without external impediment, etc.

62 Cited in Gita Sereny, *Albert Speer: His Battle with Truth* (New York: Alfred A. Knopf, 1995), p. 463. Sereny gives a detailed and intriguing discussion of whether either Hanke or Speer could really have been surprised in 1944 at the fate of Jews in Auschwitz or any of the other camps.
63 Sereny (1995, p. 574).
64 Sereny (1995).
65 Speer's case is therefore different from the case of a man such as Goebbels, whose conscience was so perverted by his fanatical adherence to Hitler that, at least sometimes, he appears to have believed sincerely in the goodness of the Nazis' inflicting torments on their victims. For a discussion of erring conscience and the way in which it can be brought about by interactions of intellect and will, see Chapter 11 on wisdom.
66 *ST* Ia.83.1 obj. 2. See also *ST* Ia.83.3, where Aquinas says, "we are said to have *liberum arbitrium* when we can receive one and reject another".
67 *ST* Ia.83.3 s.c.
68 Aquinas's point here is that just as reason is a discursive ability that allows a person to move from fundamental principles to conclusions or to move from known effects to a description of their causes, so *electio* is a discursive ability of the will because it allows a person presented with alternatives to move to the selection of one of them.
69 *ST* Ia.83.4.
70 *ST* Ia.59.3 obj. 1.
71 *QDV* 24.6.
72 See also *In NE* III.5.434 where Aquinas says that the genus of *electio* is the voluntary; on his view, although "every [act of] *electio* is something voluntary, *electio* and the voluntary are not altogether the same, but the voluntary is in more [acts than *electio* is]." One reason for insisting that *electio* is not identical to the voluntary is this: [436] "Those things which we do quickly we say are voluntary, because their source is in us, but they are not said [to be done] with *electio*, because they don't arise from deliberation."
73 *ST* Ia.19.10 obj. 2.
74 *ST* Ia.83.3.
75 *ST* Ia.83.4.
76 Cf. *QDM* 16.2 where Aquinas says, "evil cannot arise in an appetite in virtue of the appetite's being discordant with the apprehension it follows".
77 It is true, as Norman Kretzmann has pointed out to me, that in such cases what intellect is presenting to will is the only suitable means, not the only possible means. But since on Aquinas's account, acts of will are dependent on preceding acts of intellect, it is not open to the will in such a case to assent to any of the alternatives rejected by the intellect as non-suitable. Nonetheless, I do not mean to suggest that in such a case there is never any alternative possibility open to an agent, since the will may selectively direct the attention of the intellect in such a way that on reconsideration the intellect reaches a different conclusion. What is important for my purposes here is just this. It may be that for a particular agent at a certain time no alternatives besides that presented by the intellect are conceivably acceptable, so that no amount of reconsideration on the intellect's part would yield any other conclusion. (Suppose, e.g., that you love your daughter extravagantly, you place very little value on a nickel, and a nickel is not a necessary means to anything you value at least as much as your daughter. If I offer you a nickel to torture your daughter to death, presumably the only alternative acceptable to you – no matter how often you reconsider my proposition – is to reject my offer.) In such a case, the fact that there is only one alternative available to the agent does not take away the agent's freedom of will

for Aquinas. That is why Aquinas can suppose that *electio* can collapse into consent without his ever suggesting that at least sometimes such a collapse destroys freedom.

78 Of course, it is possible for there to be habits of intellect and will, and these habits will make a difference to the ease with which the will and the intellect can be caught off guard. Such habits, which are moral and intellectual virtues and vices, will be discussed in Chapters 10, 11 and 12 on justice, wisdom, and faith.

79 *QDV* 24.12.

80 *QDM* 6.1.

81 God's grace does operate on the will with causal efficacy, but Aquinas's account of grace is complicated and it is not at all clear that the operations of grace constitute an exception to his claim here. See Chapter 13 on grace and free will for further discussion of this issue.

82 *QDV* 22.5; see also *QDV* 24.10 obj.5 and ad 5.

83 *QDV* 22.5 ad 3 in contrarium.

84 See, e.g., *QDM* 16.5, where Aquinas says that there is no state in which human beings lack *liberum arbitrium*. (One assumes that he means normal adults in normal states here, given what he says elsewhere about the connection between rational faculties and *liberum arbitrium*.)

85 *QDV* 22.6.

86 *ST* Ia.82 corpus and ad 1.

87 For different versions of PAP and an assessment of their strengths and weaknesses, see, e.g., Thomas Flint, "Compatibilism and the Argument from Unavoidability", *Journal of Philosophy* 84 (1987): 423–440.

88 See, e.g., Harry Frankfurt, "Alternate Possibilities and Moral Responsibility", *Journal of Philosophy* 66 (1969): 829–839.

89 See my discussion in "Intellect, Will, and Alternate Possibilities", reprinted in John Martin Fischer and Mark Ravizza (eds), *Perspectives on Moral Responsibility* (Ithaca, NY: Cornell University Press, 1993), pp. 237–262.

90 I have discussed PAP and Frankfurt-style counterexamples in various other papers, including "Sanctification, Hardening of the Heart, and Frankfurt's Concept of Free Will", *Journal of Philosophy* 85 (1988): 395–420, and "Intellect, Will, and the Principle of Alternate Possibilities", in Michael Beaty (ed.), *Christian Theism and the Problems of Philosophy* (Notre Dame, IN: University of Notre Dame Press, 1990), pp. 254–285. (Both of these papers are reprinted in Fischer and Ravizza (1993, pp. 211–262). See also my "Libertarian Freedom", in Daniel Howard-Snyder and Jeff Jordan (eds), *Faith, Freedom, and Rationality: Philosophy of Religion Today* (Rowman and Littlefield, 1996) pp. 73–88; "Persons: Identification and Freedom", *Philosophical Topics* 24 (1996): 183–214; "Alternative Possibilities and Moral Responsibility: The Flicker of Freedom", *The Journal of Ethics*, 3 (1999): 299–324; "Transfer Principles and Moral Responsibility" (with John Martin Fischer), *Philosophical Perspectives*, 14 (2000): 47–55.

91 See, e.g., David Widerker, "Libertarian Freedom and the Avoidability of Decisions", *Faith and Philosophy*, 12 (1995): 113–118, and "Libertarianism and Frankfurt's Attack on the Principle of Alternative Possibilities", *The Philosophical Review* 104 (1995): 247–261.

92 David Widerker, "Libertarian Freedom and the Avoidability of Decisions", *Faith and Philosophy* 12 (1995): 113.

93 Since Aquinas recognizes all four Aristotelian causes, it may perhaps be necessary here to point out that the only sort of causation at issue in this discussion is efficient causation.

94 I have discussed this claim and David Widerker's use of it to call in question Frankfurt-style counterexamples in "Libertarian Freedom and the Principle of Alternate Possibilities" in Daniel Howard-Snyder and Jeff Jordan (eds), *Faith, Freedom, and Rationality: Philosophy of Religion Today* (Rowman and Littlefield, 1996), pp. 73–88.

95 In this connection, see Chapter 6 on the soul.

96 For discussion of the extent to which Descartes held Cartesian dualism, see, e.g., Margaret Wilson, *Descartes* (London: Routledge and Kegan Paul, 1978), pp. 177–185, and Tad Schmaltz, "Descartes and Malebranche on Mind and Mind–Body Union", *The Philosophical Review* 101 (1992): 281–325.

97 The best-known contemporary example is Peter van Inwagen. For his defense of libertarianism, see *An Essay on Free Will* (Oxford: Clarendon Press, 1983); and for his rejection of any sort of dualism, see, e.g., "The Possibility of Resurrection", *The International Journal for Philosophy of Religion* 9 (1978): 114–121.

98 For further discussion of and argument for this claim, see my "Moral Responsibility without Alternative Possibilities", in David Widerker and Michael McKenna (eds), *Moral Responsibility and Alternative Possibilities* (Aldershot: Ashgate Press, 2002, pp. 139–158).

99 With the usual exception of God and grace.

100 See, e.g., Alan Garfinkel, "Reductionism", and Philip Kitcher, "1953 and All That: A Tale of Two Sciences", in Richard Boyd, Philip Gasper, and J.D. Trout (eds), *The Philosophy of Science* (Cambridge, MA: MIT Press, 1993), pp. 443–459 and pp. 553–570.

101 John Dupré, *The Disorder of Things. Metaphysical Foundations of the Disunity of Science* (Cambridge, MA: Harvard University Press, 1993); see especially Chapters 4–6.

102 Dupré (1993, p. 101).

103 Dupré (1993, p. 101).

104 Or some probabilistic analogue to determinism which is compatible with quantum mechanics.

105 Dupré (1993, p. 102).

106 See Chapter 1 on Aquinas's theory of things.

107 Dupré (1993, pp. 216–217).

108 Dupré (1993, pp. 215–216).

109 Here, too, the notion of grace introduces a complexity, but I am leaving it to one side in this chapter. See Chapter 13 on grace and free will.

110 See John Martin Fischer and Mark Ravizza, *Responsibility and Control. A Theory of Moral Responsibility* (Cambridge: Cambridge University Press, 1998). For an interesting recent argument to the same conclusion based on arguments about responsibility for failure to act, see Walter Glannon, "Responsibility and the Principle of Possible Action", *Journal of Philosophy* 92 (1995): 261–274.

111 See, e.g., Fred Dretske, *Explaining Behavior: Reasons in a World of Causes* (Bradford Books, 1988).

10 A representative moral virtue: justice

1 Annette Baier, "The Need for More than Justice", in Virginia Held (ed.), *Justice and Care. Essential Readings in Feminist Ethics* (Boulder, CO: Westview Press, 1995), p. 48.

2 Baier (1995, p .52).

3 Baier (1995, p. 55).

4 Baier (1995, p. 54).

well advanced in spiritual or moral progress, consolation can always be warded off by a spirit which refuses it.

83 *In II Cor* 1.2.
84 *In II Cor* 1.2. See also *In Rom* 8.7.
85 *In Phil* 4.1; Larcher and Daffy, p. 112.
86 *Expositio super Job* 1.6–7; Damico and Yaffe, p. 79.
87 *Expositio super Job* 17.2–9: Damico and Yaffe, p. 252.
88 *Devotio Moderna: Basic Writings*, trans. John van Engen (New York: Paulist Press, 1988), p. 151. I am grateful to John van Engen for calling my attention to the intriguing material in this book.
89 Tilley, *The Evils of Theodicy*, p. 219.
90 For further discussion of Aquinas's sort of theodicy in contemporary philosophical theory, see my *Wandering in Darkness: Narrative and the Problem of Suffering* (forthcoming).

SELECT BIBLIOGRAPHY

The secondary literature on Aquinas is voluminous, and it is not possible to cite all or even the very best of it here. For a fuller bibliography, the reader should consult the major Thomistic bibliographies by Miethe and Bourke and by Ingardia listed below. The relevant contemporary philosophical literature on the topics treated in Aquinas's thought is similarly vast, and an analogous point applies to it: only a small portion of the interesting and helpful literature is cited here. Finally, strictly scientific literature is cited only in the notes and is not listed here.

Adams, Marilyn McCord (1986) "Redemptive Suffering: A Christian Solution to the Problem of Evil", in Robert Audi and William Wainwright (eds), *Rationality, Religious Belief and Moral Commitment: New Essays in the Philosophy of Religion* (Ithaca, NY: Cornell University Press), pp. 248–267.

Adams, Robert Merrihew (1971) "Has It Been Proved that All Real Existence is Contingent?", *American Philosophical Quarterly* 8: 284–291.

—— (1973) "A Modified Divine Command Theory of Ethical Wrongness", in Gene Outka and John P. Reeder Jr. (eds), *Religion and Morality* (Garden City, NY: Doubleday Anchor), pp. 318–347.

—— (1979) "Divine Command Metaethics Modified Again", *Journal of Religious Ethics* 7 (Spring): 66–79.

—— (1983) "Divine Necessity", *Journal of Philosophy* 80: 741–752.

—— (1987) "Divine Commands and the Social Nature of Obligation", *Faith and Philosophy* 4: 262–275.

—— (1999) *Finite and Infinite Goods: A Framework for Ethics* (New York: Oxford University Press).

Aertsen, Jan (1988) *Nature and Creature: Thomas Aquinas's Way of Thought* (Leiden: E. J. Brill).

—— (1993) "Aquinas' Philosophy in its Historical Setting", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 12–37.

—— (1996) *Medieval Philosophy and the Transcendentals: The Case of Thomas Aquinas* (Leiden: E. J. Brill).

Albritton, Rogers (1985) "Freedom of Will and Freedom of Action", *American Philosophical Association Proceedings and Addresses* 59: 239–251.

Alston, William (1988) "The Deontological Conception of Epistemic Justification", in J.E. Tomberlin (ed.), *Philosophical Perspectives 2 Epistemology* (Atascadero, CA: Ridgeview Publishing Co.), pp. 257–299; reprinted in *Epistemic Justification: Essays in the Theory of Knowledge* (Ithaca, NY: Cornell University Press, 1989), pp. 115–152.

—— (1989) "Concepts of Epistemic Justification", *The Monist* 68 (1985), 57–89; reprinted in *Epistemic Justification. Essays in the Theory of Knowledge* (Ithaca, NY: Cornell University Press), pp. 81–114.

—— (1993) "Aquinas on Theological Predication: A Look Backward and a Look Forward," in Eleonore Stump (ed.), *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 145–178.

Ameno, Romano (1950) "Probabile fonte della nozione boeziana di eternità", *Filosofia* I: 365–373.

Anderson, James F. (1953) *An Introduction to the Metaphysics of St. Thomas Aquinas* (Chicago: Henry Regnery Co.).

Armstrong, Arthur Hilary (ed.) (1967) *Plotinus*, vol. 3. (London and Cambridge, MA: Harvard University Press).

Ashworth, Earline Jennifer (1991) "Signification and Modes of Signifying in Thirteenth-Century Logic: A Preface to Aquinas on Analogy", *Medieval Philosophy and Theology* 1: 39–67.

Audi, Robert (1993) "The Dimensions of Faith and the Demands of Reason", in Eleonore Stump (ed.), *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 70–92.

Ayo, Nicholas (1988) *The Sermon-Conferences of St. Thomas Aquinas on the Apostles' Creed* (Notre Dame, IN: University of Notre Dame Press).

Baker, Lynne Rudder (1997) "Why Constitution is Not Identity", *Journal of Philosophy* 94: 599–621.

—— (1999) "Unity Without Identity: A New Look at Material Constitution", *Midwest Studies in Philosophy* 23: 144–165.

—— (2000) *Persons and Bodies. A Constitution View* (Cambridge: Cambridge University Press).

Barnes, Jonathan (1975) "Aristotle's Theory of Demonstration", in Jonathan Barnes, Malcolm Schofield, and Richard Sorabji (eds), *Articles on Aristotle* (London: Duckworth), pp. 65–87.

Beierwaltes, Werner (1967) *Plotin über Ewigkeit und Zeit* (Enneade iii 7) (Frankfurt am Main: Klostermann).

Bennett, Daniel (1969) "The Divine Simplicity", *Journal of Philosophy* 66: 628–637.

Bennett, Jonathan (1990) "Why is Belief Involuntary?", *Analysis* 50: 87–107.

Bernstein, Richard (1996) *Hannah Arendt and the Jewish Question* (Cambridge, MA: MIT Press).

Bezwinska, Jadwiga and Czech, Danuta (1984) *KL Auschwitz Seen by the SS: Hoess, Broad, Kremer* (New York: Howard Fertig).

Bigongiari, Dino (ed.) (1953) *The Political Ideas of St. Thomas Aquinas* (New York: Hafner).

Blandino, G. and Molinaro, A. (eds) (1989) *The Critical Problem of Knowledge* (Rome: Herder – Pontifical University of Lateran).

Boethius (1973) *The Consolation of Philosophy*, in H. F. Stewart, E. K. Rand, and S. J. Tester, *Boethius: The Theological Tractates and The Consolation of Philosophy* (London and Cambridge, MA: Harvard University Press).

Boyd, Richard (1980) "Materialism without Reductionism: What Physicalism Does Not Entail", in Ned Block (ed.), *Readings in Philosophy of Psychology*, vol. 1 (Cambridge, MA: Harvard University Press).

Bracken, W. Jerome (1978) "Why Suffering in Redemption? A New Interpretation of the Theology of the Passion in the Summa Theologica, 3, 46–49, by Thomas Aquinas", PhD dissertation, Fordham University.

Bradley, Denis (1997) *Aquinas on the Twofold Human Good: Reason and Human Happiness in Aquinas's Moral Science* (Washington, DC: Catholic University of America Press).

Brady, Ignatius (1974) "John Pecham and the Background of Aquinas' *De Aeternitate Mundi*", in A.A. Maurer (ed.), *St. Thomas Aquinas 1274–1974: Commemorative Studies* (Toronto: Pontifical Institute of Mediaeval Studies), vol. II, pp. 141–178.

Braine, David (1988) *The Reality of Time and the Existence of God: The Project of Proving God's Existence* (Oxford: Oxford University Press).

—— (1992) *The Human Person: Animal and Spirit* (Notre Dame, IN: University of Notre Dame Press).

Brezik, Victor B. (ed.) (1981) *One Hundred Years of Thomism* (Houston, TX: Center for Thomistic Studies).

Brock, Stephen Louis (1998) *Action and Conduct: Thomas Aquinas and the Theory of Action* (Edinburgh: T&T Clark).

Brown, Oscar James (1981) *Natural Rectitude and Divine Law in Aquinas* (Toronto: Pontifical Institute of Medieval Studies).

Burrell, David (1979) *Aquinas: God and Action* (Notre Dame, IN: University of Notre Dame Press).

—— (1986) *Knowing the Unknowable God: Ibn Sina, Maimonides, Aquinas* (Notre Dame, IN: University of Notre Dame Press).

—— (1992) "Review of Christopher Hughes's A Complex Theory of a Simple God", *The Journal of Religion* 72: 120–121.

—— (1993a) *Freedom and Creation in Three Traditions* (Notre Dame, IN: University of Notre Dame Press).

—— (1993b) "Aquinas and Islamic and Jewish Thinkers", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 60–84.

Busa, Roberto (1974–80) *Index Thomisticus: Sancti Thomae Aquinatis operum omnium indices et concordantiae in quibus verborum omnium et singulorum formae et lemmata cum suis frequentiis et contextibus variis modis* (Stuttgart-Bad Cannstatt: Frommann-Holzboog).

Campodonico, Angelo (1986) *Alla Scoperta dell'Essere: Saggio sul pensiero di Tommaso d'Aquino* (Milan: Jaca Book).

—— (1996) *Integritas metafisica ed etica in San Tommaso* (Fiesole: Nardini).

Cartwright, Nancy (1989) *Nature's Capacities and Their Measurement* (Oxford: Clarendon Press).

Catan, John R. (ed.) (1980) *St. Thomas Aquinas on the Existence of God: Collected Papers of Joseph Owens* (Albany NY: State University of New York Press).

Chenu, Marie-Dominique (1964) *Toward Understanding St. Thomas* (Chicago: Regnery).

—— (2002) *Aquinas and His Role in Theology*, trans. Paul Philibert (Wilmington, DE: Michael Glazier Books).

Chisholm, Roderick (1968) "Lewis' Ethics of Belief", in Paul Arthur Schilpp (ed.), *The Philosophy of C.I. Lewis* (London: Cambridge University Press).
—— (1991) "On the Simplicity of the Soul", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 5 (Atascadero, CA: Ridgeview Publishing Co.).
Churchland, Patricia (1990) *Neurophilosophy. Toward a Unified Science of the Mind/Brain* (Cambridge, MA: MIT Press).
Cohen, Sheldon M. (1982) "St. Thomas Aquinas on the Immaterial Reception of Sensible Forms", *The Philosophical Review* 91: 193–209.
Copleston, Frederick Charles (1955) *Aquinas* (Baltimore, MD: Penguin Press).
Craig, William Lane (1979) "God, Time and Eternity", *Religious Studies* 29: 165–170.
—— (1985) "Was Thomas Aquinas a B-Theorist of Time?" *New Scholasticism* 59: 473–483.
—— (1990) "God and Real Time", *Religious Studies* 26: 335–347.
—— (1991) "Time and Infinity", *International Philosophical Quarterly* 31: 387–401.
—— (1996) "Timelessness and Creation", *Australasian Journal of Philosophy* 74: 646–656.
—— (1997) "Divine Timelessness and Necessary Existence", *International Philosophical Quarterly* 37: 217–224.
—— (1998a) "The Tensed vs. Tenseless Theory of Time: A Watershed for the Conception of Divine Eternity", in R. LePoidevin (ed.), *Questions of Time and Tense* (Oxford: Oxford University Press), pp. 221–250.
—— (1998b) "Divine Timelessness and Personhood", *International Journal for Philosophy of Religion* 43: 109–124.
—— (2000a) "Timelessness and Omnitemporality", *Philosophia Christi* 2: 29–33.
—— (2000b) "Omniscience, Tensed Facts, and Divine Eternity", *Faith and Philosophy* 17: 225–241.
—— (2001a) *Time and Eternity: Exploring God's Relationship to Time* (Wheaton, IL: Crossway).
—— (2001b) *God, Time and Eternity* (Dordrecht: Kluwer Academic Publishers).
Crotty, Nicholas (1962) "The Redemptive Role of Christ's Resurrection", *The Thomist* 25: 54–106.
Cross, Richard (1996) "Aquinas on Nature, Hypostasis, and the Metaphysics of the Incarnation", *The Thomist* 60: 171–202.
—— (2002) *The Metaphysics of the Incarnation: Thomas Aquinas to Duns Scotus* (Oxford: Oxford University Press).
Daly, Mary (1971) "The Notion of Justification in the Commentary of St. Thomas Aquinas on the Epistle to the Romans", PhD dissertation, Marquette University, Milwaukee.
Davies, Brian (1992) *The Thought of Thomas Aquinas* (Oxford: Clarendon Press).
Deferrari, Roy J. and Barry, M. Inviolata (1948) *A Complete Index of the Summa Theologica of St. Thomas Aquinas* (Washington, DC: Catholic University of America Press).
De la Trinité, Philippe (1961) *What is Redemption?*, trans. Anthony Armstrong (New York: Hawthorn Books).
Dennett, Daniel (1991) *Consciousness Explained* (Boston: Little, Brown and Co.).

Descartes, René (1984) *The Philosophical Writings of Descartes*, vol. II. trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch (Cambridge: Cambridge University Press).
De Tocco, Guillaume (1323) *Ystoria sancti Thome de Aquino de Guillaume de Tocco*, edited, with introduction and notes, by Claire Le Brun-Gouanvic (Toronto: Pontifical Insitute of Medieval Studies, 1996).
Dienstag, Jacob I. (ed.) (1975) *Studies in Maimonides and St. Thomas Aquinas* (New York: KTAV Publishing House, Inc.).
Dittoe, John T. (1946) "Sacramental Incorporation into the Mystical Body", *The Thomist* 9: 469–514.
Dobbs-Weinstein, Idit (1995) *Maimonides and St. Thomas on the Limits of Reason* (Albany, NY: State University of New York Press).
Doig, James (1972) *Aquinas on Metaphysics: A Historico-Doctrinal Study of the Commentary on the Metaphysics* (The Hague: Martinus Nijhoff).
Donagan, Alan (1977) *The Theory of Morality* (Chicago: University of Chicago Press).
—— (1982) "Thomas Aquinas on Human Action", in N. Kretzmann, A. Kenny and J. Pinborg (eds), *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press), pp. 642–654.
—— (1985) *Human Ends and Human Actions: An Exploration in St. Thomas's Treatment* (Milwaukee: Marquette University Press).
Dretske, Fred (1988) *Explaining Behavior: Reasons in a World of Causes* (Cambridge, MA: MIT Press).
—— (1991) "Perception: Heil", in Brian McLaughlin (ed.), *Dretske and His Critics* (Oxford: Blackwell), pp. 180–184.
Dummett, Michael (1964) "Bringing About the Past", *Philosophical Review* 73: 338–359.
Dupré, John (1993) *The Disorder of Things. Metaphysical Foundations of the Disunity of Science* (Cambridge, MA: Harvard University Press).
Eco, Umberto (1988) *Problema Estetico in Tommaso d'Aquino* (Cambridge, MA: Harvard University Press).
Edwards, Jonathan (1961) *A Treatise Concerning Religious Affections* (Edinburgh: Banner of Truth Trust).
Elders, Leo (1990a) *The Philosophical Theology of St. Thomas Aquinas*, Studien und Texte zur Geistesgeschichte des Mittelalters (New York: E. J. Brill).
—— (ed.) (1990b) "La doctrine de la revelation divine de saint Thomas d'Aquin", *Studi Tomistici* 37. (Rome: Pontificia Accademia di S. Tommaso: Libreria Editrice Vaticana).
Eschmann, Ignatius (1997) *The Ethics of Saint Thomas Aquinas* (Toronto: Pontifical Institute of Medieval Studies).
Fabro, Cornelio (1961) *Participation et causalité selon Saint Thomas d'Aquin* (Participation and Causality in the Work of Saint Thomas Aquinas) (Louvain: Publications Universitaires de Louvain).
Fine, Kit (1999) "Things and Their Parts", *Midwest Studies in Philosophy* 23: 61–74.
Finnis, John (1980) *Natural Law and Natural Rights* (New York: Oxford University Press).
—— (1998) *Aquinas. Moral, Political, and Legal Theory* (Oxford: Oxford University Press).

Fischer, John Martin and Ravizza, Mark (1998) *Responsibility and Control. A Theory of Moral Responsibility* (Cambridge: Cambridge University Press).
Flint, Thomas (1987) "Compatibilism and the Argument from Unavoidability", *Journal of Philosophy* 84: 423–440.
Flint, Thomas P. and Freddoso, Alfred J. (1983) "Maximal Power", in Alfred J. Freddoso (ed.), *The Existence and Nature of God* (Notre Dame, IN: University of Notre Dame Press), pp. 81–113.
Foley, John (1994) *Creativity and the Roots of Liturgy* (Portland, OR: Pastoral Press).
Foster, Kenelm (1959) *The Life of Saint Thomas Aquinas, Biographical Documents* (London: Longmans, Green).
Frankfurt, Harry (1969) "Alternate Possibilities and Moral Responsibility", *Journal of Philosophy* 66: 829–839.
—— (1971) "Freedom of the Will and the Concept of a Person", *The Journal of Philosophy* 68: 5–20; reprinted in *The Importance of What We Care About* (Cambridge: Cambridge University Press, 1988).
Gallagher, David M. (1988) "Thomas Aquinas on the Causes of Human Choice", Dissertation. Catholic University of America, 1988.
—— (1990) "Aquinas on Moral Action: Interior and Exterior Acts", *Proceedings of the American Catholic Philosophical Association* 64: 118–129.
—— (1991) "Thomas Aquinas on the Will as Rational Appetite", *Journal of the History of Philosophy* 29: 559–584.
—— (1994) *Thomas Aquinas and His Legacy*, Studies in Philosophy and the History of Philosophy, vol. 28 (Washington, DC: Catholic University of America Press).
Garfinkel, Alan (1993) "Reductionism", in Richard Boyd, Philip Gasper, and J.D. Trout (eds), *The Philosophy of Science* (Cambridge, MA: MIT Press), pp. 443–459.
Garrigou-Lagrange, Reginald (1943) *The One God* (St.Louis and London: B. Herder Book Co.).
—— (1950) *Christ the Savior: A Commentary on the Third Part of St. Thomas' Theological Summa* (St.Louis and London: B. Herder Book Co.).
—— (1955) *God: His Existence and His Nature: A Thomistic Solution of Certain Agnostic Antinomies*, vol. 2, trans. Dom Bede Rose (St. Louis and London: B. Herder Book Co.).
Gauthier, René Antoine (1961) "Introduction", in *Saint Thomas d'Aquin: Contra Gentiles*, Livre premier (Lyons: P. Lethielleux).
—— (1993) *Saint Thomas d'Aquin: Somme contre les gentils: Introduction*, Collection Philosophie Européane, dirigée par H. Hude (Paris: Editions Universitaires).
Geach, Peter (1969) *God and the Soul* (London: Routledge & K. Paul).
—— (1977) *Providence and Evil* (Cambridge: Cambridge University Press).
Gellman, Jerome (1977) "Omnipotence and Impeccability", *The New Scholasticism* 51: 21–37.
Gilby, Thomas (1955) *The Political Thought of Thomas Aquinas* (Chicago: University of Chicago Press).
Gilson, Etienne (1956) *The Christian Philosophy of St. Thomas Aquinas*, trans. L.K. Shook (New York: Random House).
—— (1960) *Elements of Christian Philosophy* (New York: New American Library).
Glannon, Walter (1955) "Responsibility and the Principle of Possible Action", *Journal of Philosophy* 92: 261–274.

Greco, John (1993) "Virtues and Vices of Virtue Epistemology", *Canadian Journal of Philosophy*, 23: 413–432.
Grene, Marjorie (1972) "Aristotle and Modern Biology", *Journal of the History of Ideas* 33: 395–424.
Griffin, David Ray (1976) *God, Power, and Evil: A Process Theodicy* (Philadelphia, PA: Westminster Press).
Haldane, John J. (1983) "Aquinas on Sense-Perception", *The Philosophical Review* 92: 233–239.
Hankley, W. J. (1987) *God in Himself: Aquinas' Doctrine of God as Expounded in the Summa Theologiae* (Oxford: Oxford University Press).
Heil, John (1991) "Perceptual Experience", in Brian McLaughlin (ed.), *Dretske and His Critics* (Oxford: Blackwell), pp. 1–16.
Henle, Robert John (1956) *Saint Thomas and Platonism* (The Hague: Martinus Nijhoff).
Hoffman, Joshua (1979) "Can God Do Evil?", *Southern Journal of Philosophy* 17: 213–220.
Hoffman, Joshua and Rosencrantz, Gary (1991) "Are Souls Unintelligible?", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 5 (Atascadero, CA: Ridgeview Publishing Co.).
Hoffman, Paul (1990) "St. Thomas Aquinas on the Halfway State of Sensible Being", *The Philosophical Review* 99: 73–92.
Hood, John (1995) *Aquinas and the Jews* (Philadelphia, PA: University of Pennsylvania Press).
Hughes, Christopher (1989) *A Complex Theory of a Simple God* (Ithaca, NY: Cornell University Press).
Ingardia, Richard (1993) *Thomas Aquinas: International Bibliography 1977–1990* (Bowling Green, KY: The Philosophy Documentation Center).
Irwin, Terence H. (1984) 'The Metaphysical and Psychological Basis of Aristotle's Ethics,' in Amélie Rorty (ed.), *Essays on Aristotle's Ethics* (Berkeley, CA: University of California Press).
—— (1988) *Aristotle's First Principles* (Oxford: Clarendon Press).
—— (1992) "Who Discovered the Will?", in J.E. Tomberlin (ed.), *Philosophical Perspectives 6: Ethics* (Atascadero, CA: Ridgeview Publishing Co.).
Jaffa, Harry V. (1952) *Thomism and Aristotelianism* (Chicago: University of Chicago Press).
Jenkins, John (1997) *Knowledge and Faith in Thomas Aquinas* (Cambridge: Cambridge University Press).
Johnston, Mark (1992) "Constitution is Not Identity", *Mind* 101: 89–105
Jordan, Mark (1983) "The Names of God and the Being of Names" in Alfred J. Freddoso (ed.), *The Existence and Nature of God* (Notre Dame, IN: University of Notre Dame Press), pp. 161–190
—— (1986) *Ordering Wisdom: The Hierarchy of Philosophical Discourses in Aquinas* (Notre Dame, IN: University of Notre Dame Press).
—— (1993) "Theology and Philosophy", in Norman Kretzmann and Eleonore Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 232–251.
Kavanaugh, John (2001) *Who Count as Persons?: Human Identity and the Ethics of Killing* (Washington, DC : Georgetown University Press).

Keenan, James F. (1992) *Goodness and Righteousness in Thomas Aquinas's Summa Theologiae* (Washington, DC: Georgetown University Press).
Kenny, Anthony (1969a) "Divine Foreknowledge and Human Freedom", in A. Kenny (ed.), *Aquinas: A Collection of Critical Essays* (Garden City, NY: Anchor Books).
—— (ed.) (1969b) *Aquinas: A Collection of Critical Essays* (Garden City, NY: Doubleday).
—— (1979) *The God of the Philosophers* (Oxford: Clarendon Press).
—— (1980a) *Aquinas* (New York: Hill & Wang).
—— (1980b) *The Five Ways: St Thomas Aquinas' Proofs of God's Existence* (Notre Dame, IN: University of Notre Dame Press).
—— (1993) *Aquinas on Mind* (London: Routledge).
Kent, Bonnie (1995) *Virtues of the Will: The Transformation of Ethics in the Late Thirteenth Century* (Washington, DC: The Catholic University of America Press).
Kim, Jaegwon (1993a) "Supervenience for Multiple Domains", reprinted in *Supervenience and Mind* (Cambridge: Cambridge University Press), pp. 109–130.
—— (1993b) "Concepts of Supervenience", reprinted in *Supervenience and Mind* (Cambridge: Cambridge University Press, 1993).
Kirn, Arthur G. (ed.) (1967) *G.B. Phelan: Selected Papers* (Toronto: Pontifical Institute of Mediaeval Studies).
Kitcher, Philip (1993) "1953 and All That: A Tale of Two Sciences", in Richard Boyd, Philip Gasper, and J.D. Trout (eds), *The Philosophy of Science* (Cambridge, MA: MIT Press), pp. 553–570.
Klee, Robert L. (1984) "Micro-determinism and Concepts of Emergence", *Philosophy of Science* 51: 44–63.
Klemperer, Victor (1996) *Ich will Zeugnis ablegen bis zum letzten: Tagebücher 1933–45* (Berlin: Aufbau Verlag).
Kneale, Martha (1968–9) "Eternity and Sempiternity", *Proceedings of the Aristotelian Society*, 69: 223–238.
Kneale, William (1960) "Time and Eternity in Theology", *Proceedings of the Aristotelian Society* 61: 87–108.
—— (1967) "Eternity", in Paul Edwards (ed.), *The Encyclopedia of Philosophy*, vol. 3 (New York: Macmillan).
Knuuttila, Simo (1993) *Modalities in Medieval Philosophy* (London: Routledge).
Korolec, J. (1981) "Free Will and Free Choice" in Norman Kretzmann, Anthony Kenny, Jan Pinborg (eds), assoc. ed. Eleonore Stump, *Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press).
Kosman, L. A. (1984) "Being Properly Affected: Virtues and Feelings in Aristotle's Ethics", in Amélie Rorty (ed.), *Essays on Aristotle's Ethics* (Berkeley, CA: University of California Press).
Kremer, Klaus (1971) *Die neuplatonische Seinsphilosophie und ihre Wirkung auf Thomas von Aquin* (Neoplatonist Metaphysics and Their Effect on Thomas Aquinas) (Leiden: E. J. Brill).
Kretzmann, Norman (1976) "Time Exists – But Hardly, or Obscurely *(Physics* iv, 10; 217b29–218a33)", *Aristotelian Society Supplementary Volume* I: 91–114.
—— (1981) "*Sensus compositus, sensus divisus*, and propositional attitudes", *Medioevo* 7: 195–229.

—— (1983a) "Goodness: Knowledge, and Indeterminacy in the Philosophy of Thomas Aquinas", *Journal of Philosophy* 80: 631–649.
—— (1983b) "Abraham, Isaac, and Euthyphro: God and the Basis of Morality", in Donald Stump *et al.* (eds), *Hamartia: The Concept of Error in the Western Tradition* (New York and Toronto: The Edwin Mellen Press), pp. 27–50.
—— (1984) "Nos Ipsi Principia Sumus: Boethius and the Basis of Contingency", in Tamar Rudavsky (ed.), *Divine Omniscience and Omnipotence in Medieval Philosophy* (Dordrecht: D. Reidel), pp. 23–50.
—— (1988a) "Lex iniusta non est lex: Laws on Trial in Aquinas' Court of Conscience", *The American Journal of Jurisprudence* 33: 99–122.
—— (1988b) "Warring against the Law of My Mind: Aquinas on Romans 7", in Thomas Morris (ed.), *Philosophy and the Christian Faith* (Notre Dame, IN: University of Notre Dame Press), pp. 172–195.
—— (1988c) "God Among the Causes of Moral Evil: Hardening of Hearts and Spiritual Blinding", *Philosophical Topics* 16: 189–214.
—— (1992a) "Infallibility, Error, and Ignorance", *Canadian Journal of Philosophy*, supp. vol. 17: 159–194.
—— (1992b) "Infallibility, Error, and Ignorance", in Richard Bosley and Martin Tweedale (eds), *Aristotle and His Medieval Interpreters*, *Canadian Journal of Philosophy*, supplementary volume (Calgary: University of Calgary Press).
—— (1993) "Philosophy of Mind", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 128–159.
—— (1997) *The Metaphysics of Theism: Aquinas's Natural Theology in summa contra gentiles I* (Oxford: Clarendon Press).
—— (1999) *The Metaphysics of Creation: Aquinas's Natural Theology in summa contra gentiles II* (Oxford: Clarendon Press).
Kretzmann, Norman and Stump, Eleonore (eds) (1993) *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press).
Kuksewicz, Zdzislaw (1982) "The Potential and the Agent Intellect", and "Criticisms of Aristotelian Psychology and the Augustinian-Aristotelian Synthesis", in Norman Kretzmann, Anthony Kenny, Jan Pinborg (eds), assoc. ed., Eleonore Stump. *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press), pp. 595–602 and 623–628.
LaCroix, Richard (1977) "Augustine on the Simplicity of God", *New Scholasticism* 51: 453–469.
Lawler, Michael (1971) "Grace and Free Will in Justification: A Textual Study in Aquinas", *The Thomist* 35: 601–630.
Leftow, Brian (1989) "The Roots of Eternity", *Religious Studies* 24: 189–212.
—— (1990a) "Aquinas on Time and Eternity", *American Catholic Philosophical Quarterly* 64: 387–399.
—— (1990b) "Boethius on Eternity", *History of Philosophy Quarterly* 7: 123–142.
—— (1991a) *Time and Eternity* (Ithaca, NY: Cornell University Press).
—— (1991b) "Timelessness and Foreknowledge", *Philosophical Studies* 63: 309–325.
—— (1991c) "Eternity and Simultaneity", *Faith and Philosophy* 8: 148–179.
—— (1992) "Timelessness and Divine Experience", *Sophia* 30: 43–53.
Lehrer, Keith (1990) *Theory of Knowledge* (Boulder, CO: Westview Press).

Leibniz, Gottfried (1969) "On the Radical Origination of Things", trans. Leroy E. Loemker in *Gottfried Wilhelm Leibniz, Philosophical Papers and Letters*, 2nd edn (Dordrecht: D. Reidel), pp. 486–491.
Lewis, David (1986) "The Problem of Temporary Intrinsics", in *On the Plurality of Worlds* (Oxford: Blackwell), reprinted in Peter van Inwagen and Dean Zimmerman (eds), *Metaphysics: The Big Questions* (Malden, MA: Blackwell, 1998), pp. 204–206.
Lifton, Robert Jay (1986) *The Nazi Doctors* (New York: Basic Books).
Lisska, Anthony J. (1996) *Aquinas's Theory of Natural Law. An Analytic Reconstruction* (Oxford: Clarendon Press).
Lonergan, Bernard (1946) *Grace and Freedom: Operative Grace in the Thought of St. Thomas Aquinas*, J.P. Burns (ed.) (New York: Herder & Herder).
—— (1967) *Verbum: Word and Idea in Aquinas*, David Burrell (ed.) (Notre Dame, IN: University of Notre Dame Press)
Lynn, William D. (1962) *Christ's Redemptive Merit: The Nature of its Causality According to St. Thomas. Analecta Gregoriana* 115, Series Facultatis Theologicae (Rome: Gregorian University).
McCormack, Stephen (1944) "The Configuration of the Sacramental Character", *The Thomist* 7: 458–491.
MacDonald, Scott (1984) "The Esse/Essentia Argument in Aquinas' *De ente et essentia*", *Journal of the History of Philosophy* 22: 157–172.
—— (ed.) (1991a) *Being and Goodness: The Concept of the Good in Metaphysics and Philosophical Theology* (Ithaca, NY: Cornell University Press).
—— (1991b) "Ultimate Ends in Practical Reasoning: Aquinas' Aristotelian Moral Psychology and Anscombe's Fallacy", *The Philosophical Review* 100: 31–66.
—— (1993a) "Christian Faith", in Eleonore Stump (ed.), *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 42–69.
—— (1993b) "Theory of Knowledge", in Norman Kretzmann and Eleonore Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 160–195.
MacDonald, Scott and Stump, Eleonore (eds) (1999) *Aquinas's Moral Theory. Essays in Honor of Norman Kretzmann* (Ithaca, NY: Cornell University Press).
Macierowski, E. M. (1998) *Thomas Aquinas's Earliest Treatment of the Divine Essence.* (Binghamton, NY: Center for Medieval and Renaissance Studies, Binghamton University).
McInerny, Ralph (1977) *St. Thomas Aquinas* (Boston: Twayne Publishers).
—— (1981) *Rhyme and Reason: St. Thomas and Modes of Discourse* (Milwaukee: Marquette University Press).
—— (1986) *Being and Predication. Thomistic Interpretations*, Studies in Philosophy and the History of Philosophy, vol. 16 (Washington, DC: Catholic University of America Press).
—— (1990a) *Boethius and Aquinas* (Washington, DC: Catholic University of America Press).
—— (1990b) *A First Glance at St. Thomas Aquinas* (Notre Dame, IN: University of Notre Dame Press).
—— (1992) *Aquinas on Human Action* (Washington, DC: Catholic University of America Press).

—— (1993a) *Aquinas against the Averoists: On There Being Only One Intellect* (West Lafayette, IN: Purdue University Press).
—— (1993b) "Ethics", in Norman Kretzmann and Eleonore Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 196–216.
—— (1996) *Aquinas and Analogy* (Washington, DC: Catholic University of America Press).
—— (1997) *Ethica Thomistica: The Moral Philosophy of Thomas Aquinas* (Washington, DC: Catholic University of America Press).
McLaughlin, Brian (1992) "The Rise and Fall of British Emergentism", in Ansgar Beckermann, Hans Flohr and Jaegwon Kim (eds), *Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism* (Berlin: Walter de Gruyter), pp. 49–93.
Mahoney, Edward (1982) "Sense, Intellect, and Imagination in Albert, Thomas, and Siger", in Norman Kretzmann, Anthony Kenny, Jan Pinborg (eds), assoc. ed. Eleonore Stump, *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press).
Mann, William (1975) "The Divine Attributes", *American Philosophical Quarterly* 12: 151–159.
—— (1982) "Divine Simplicity", *Religious Studies*: 451–471.
—— (1983) "Simplicity and Immutability in God", *International Philosophical Quarterly* 23: 267–276.
Marinelli, Francesco (1977) *Segno e Realita. Studi di sacramentaria tomista* (Rome: Lateranum).
Maritain, Jacques (1942) *Saint Thomas and the Problem of Evil* (Milwaukee: Marquette University Press).
—— (1951) *Man and the State* (Chicago: University of Chicago Press).
Marrone, Steven P. (1985) *Truth and Scientific Knowledge in the Thought of Henry of Ghent* (Cambridge, MA: The Medieval Academy of America).
Martin, Christopher (ed.) (1988) *The Philosophy of Thomas Aquinas: Introductory Readings* (London: Routledge).
Meiland, Jack (1980) "What Ought We to Believe? or The Ethics of Belief Revisited", *American Philosophical Quarterly* 17: 15–24.
Miethe, T. L. and Bourke, Vernon (1980) *Thomistic Bibliography 1940–1978* (Westport, CT: Greenwood Press).
Miller, Fred (1974) "Aristotle on the Reality of Time", *Archiv für Geschichte der Philosophie* 61: 132–155.
Moore, Sebastian (1977) *The Crucified is No Stranger* (London: Darton, Longman and Todd Ltd.).
Morris, Thomas V. (1984) "The God of Abraham, Isaac, and Anselm", *Faith and Philosophy* 1: 177–187.
—— (1986) *The Logic of God Incarnate* (Ithaca, NY: Cornell University Press).
—— (1987) "The Necessity of God's Goodness", in *Anselmian Explorations: Essay in Philosophical Theology* (Notre Dame, IN: University of Notre Dame Press), pp. 42–69.
Nathan, N. M. L. (1993) "Weak Materialism", in Howard Robinson (ed.), *Objections to Physicalism* (Oxford: Clarendon Press).

Nelson, Herbert (1987) "Time(s), Eternity, and Duration", *International Journal for Philosophy of Religion* 22: 3–19.
Nussbaum, Martha C. (1992) "The Text of Aristotle's *De anima*", in Martha C. Nussbaum and Amélie O. Rorty (eds), *Essays on Aristotle's De anima* (Oxford: Clarendon Press), pp. 1–6.
O'Connor, Timothy (1994) "Emergent Properties", *American Philosophical Quarterly* 31: 91–104.
O'Leary, Joseph M (1952) *The Development of the Doctrine of St. Thomas Aquinas on the Passion and Death of Our Lord* (Chicago: J. S. Paluch Co., Inc.).
Olson, Eric (1997) *The Human Animal* (Oxford: Oxford University Press).
O'Meara, Thomas F. (1997) *Thomas Aquinas: Theologian* (Notre Dame, IN: University of Notre Dame Press).
Owen, Gwilym Ellis Lane (1966) "Plato and Parmenides on the Timeless Present", *Monist* L: 317–340.
Owens, Joseph (1980) *St. Thomas Aquinas on the Existence of God: Collected papers of Joseph Owens*, (ed.) J. Catan (Albany, NY: State University of New York Press).
—— (1986) "Aquinas' Distinction at *De ente et essentia* 4.119–123", *Mediaeval Studies* 48: 264–287.
—— (1992a) "Aristotle and Aquinas on Cognition", in Richard Bosley and Martin Tweedale (eds), *Aristotle and His Medieval Interpreters, Canadian Journal of Philosophy*, supplementary volume (Calgary: University of Calgary Press), pp. 103–123.
—— (1992b) *Cognition: An Epistemological Inquiry* (Houston, TX: Center for Thomistic Studies).
—— (1993) "Aristotle and Aquinas", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 38–59.
Parente, Pietro (1949) *De verbo incarnato*, 3rd edn (Rome: Marietti).
Pasnau, Robert (1997) *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press).
—— (2002) *Thomas Aquinas on Human Nature: A Philosophical Study of Summa theologiae 1a, 75–89* (London: Cambridge University Press).
Pegis, Anton Charles (1934) *St Thomas and the Problem of the Soul in the Thirteenth Century* (Toronto: Pontifical Institute of Mediaeval Studies).
Pernick, Martin S. (1985) *A Calculus of Suffering: Pain, Professionalism, and Anesthesia in Nineteenth Century America* (New York: Columbia University Press).
Perry, John (1979) "The Problem of the Essential Indexical", *Nous* 13: 3–21.
Peter of Spain (1972) *Tractatus*, (ed.) L.M. De Rijk (Amsterdam: Van Gorcum & Co.).
Plantinga, Alvin (1980) *Does God Have a Nature?* (Milwaukee: Marquette University Press).
—— (1983) "Reason and Belief in God", in Alvin Plantinga and Nicholas Wolterstorff (eds), *Faith and Rationality: Reason and Belief in God* (Notre Dame, IN: University of Notre Dame Press).
—— (1992) "An Evolutionary Argument Against Naturalism", *Logos* 12: 27–49.
—— (1993a) *Warrant: The Current Debate* (Oxford: Oxford University Press).
—— (1993b) *Warrant and Proper Function* (Oxford: Oxford University Press).
—— (2000) *Warranted Christian Belief* (Oxford: Oxford University Press).

Pieper, Josef (1962) *Guide to Thomas Aquinas* (Notre Dame, IN: University of Notre Dame Press).
Pike, Nelson (1969) "Omnipotence and God's Ability to Sin", *American Philosophical Quarterly* 6: 208–216.
—— (1970) *God and Timelessness* (London: Routledge and Kegan Paul).
Potts, Timothy (ed.) (1980) *Conscience in Medieval Philosophy* (Cambridge: Cambridge University Press).
Putallaz, François-Xavier (1991) *Le Sens de la Reflexion chez Thomas D'Aquin* (Paris: Librairie Philosophique J. Vrin).
Quinn, Philip (1978) *Divine Commands and Moral Requirements* (Oxford: Clarendon Press).
—— (1997) "Tiny Selves: Chisholm on the Simplicity of the Soul", in Louis E. Hahn (ed.), *Roderick M. Chisholm* (Boston: Open Court Press).
Rand, Edward Kennard (1946) *Cicero in the Courtroom of St. Thomas Aquinas* (Milwaukee: Marquette University Press).
Reith, Herman (1958) *The Metaphysics of St. Thomas Aquinas* (Milwaukee: The Bruce Publishing Company).
Riesenhuber, Klaus (1974) "The Bases and Meaning of Freedom in Thomas Aquinas", *Proceedings of the American Catholic Philosophical Association* 48: 99–111.
Rivière, Jean (1909) *The Doctrine of the Atonement: A Historical Essay*, trans. Luigi Cappadelta. (St. Louis, MO: Herder).
Robinson, Howard (ed.) (1993) *Objections to Physicalism* (Oxford: Clarendon Press).
Rock, Irvin (1987) *The Logic of Perception* (Cambridge, MA: MIT Press, Bradford Books).
Rogers, Eugene F. (1995) *Thomas Aquinas and Karl Barth: Sacred Doctrine and the Natural Knowledge of God* (Notre Dame, IN: University of Notre Dame Press).
Ross, James F. (1969) *Philosophical Theology* (Indianapolis and New York: Bobbs-Merrill).
—— (1981) *Portraying Analogy* (Cambridge: Cambridge University Press).
—— (1985) "Aquinas on Belief and Knowledge", in G. Etzkorn (ed.), *Essays Honoring Allan B. Wolter* (St. Bonaventure, NY: Franciscan Institute).
Rowe, William (1984) "Rationalistic Theology and Some Principles of Explanation", *Faith and Philosophy* 1: 357–369.
—— (1986) "The Empirical Argument from Evil", in Robert Audi and William Wainwright (eds), *Rationality, Religious Belief and Moral Commitment: New Essays in the Philosophy of Religion* (Ithaca, NY: Cornell University Press).
—— (1993) "The Problem of Divine Perfection and Freedom", in Eleonore Stump (ed.), *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 223–233.
Salmon, Wesley C. (1975) *Space, Time, and Motion* (Encino, CA: Dickenson Publishing Company).
Schieck, Charles A. (1955) "St. Thomas on the Nature of Sacramental Grace", *The Thomist* 18: 1–30 and 242–278.
Schmaltz, Tad (1992) "Descartes and Malebranche on Mind and Mind-Body Union", *The Philosophical Review* 101: 281–325.
Schmidt, Robert W. (1966) *The Domain of Logic According to St. Thomas Aquinas* (The Hague: Martinus Nijhoff).
Schofield, Malcolm (1970) "Did Parmenides Discover Eternity?", *Archiv für Geschichte der Philosophie* 52: 113–135.

Searle, John (1992) *The Rediscovery of the Mind* (Cambridge, MA: MIT Press).
Sentis, Laurent (1992) *Saint Thomas D'Aquin et le Mal* (Paris: Beauchesne).
Sereny, Gita (1983) *Into That Darkness: An Examination of Conscience* (New York: First Vintage Books Edition).
—— (1995) *Albert Speer: His Battle with Truth* (New York: Alfred A. Knopf).
Shanley, Brian (1997) "Eternal Knowledge of the Temporal in Aquinas", *American Catholic Philosophical Quarterly* 71: 197–224.
—— (1998) "Divine Causation and Human Freedom in Aquinas", *American Catholic Philosophical Quarterly* 72: 99–122.
—— (2002) *The Thomist Tradition* (Dordrecht: Kluwer Academic Publishers).
Shoemaker, Sydney (1984) *Identity, Cause, and Mind* (Cambridge: Cambridge University Press).
Shoemaker, Sydney and Swinburne, Richard (1984) *Personal Identity* (Oxford: Basil Blackwell).
Sheppard, Anne (1991) "Phantasia and Mental Images: Neoplatonist Interpretations of *De anima*, 3.3", in Julia Annas (ed.), *Aristotle and the Later Tradition*, Oxford Studies in Ancient Philosophy, supplementary volume (Oxford: Clarendon Press), pp. 165–174.
Sigmund, P. E. (1993) "Law and Politics", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 217–231.
Stump, Eleonore (1979) "Petitionary Prayer", *American Philosophical Quarterly*, 16: 81–91.
—— (1983) "Hamartia in Christian Belief: Boethius on the Trinity", in Donald Stump *et al.* (eds), *Hamartia: The Concept of Error in the Western Tradition* (New York and Toronto: The Edwin Mellen Press), pp. 131–148.
—— (1985) "The Problem of Evil", *Faith and Philosophy* 2: 392–424.
—— (1988) "Sanctification, Hardening of the Heart, and Frankfurt's Concept of Free Will", *Journal of Philosophy* 85: 395–420; reprinted in John Martin Fischer and Mark Ravizza (eds), *Moral Responsibility* (Ithaca, NY: Cornell University Press, 1993), pp. 211–234.
—— (1989a) *Dialectic and Its Place in the Development of Medieval Logic* (Ithaca, NY: Cornell University Press).
—— (1989b) "Review of Thomas Morris's *The Logic of God Incarnate*", *Faith and Philosophy* 6: 218–223.
—— (1990a) "Providence and the Problem of Evil", in Thomas Flint (ed.), *Christian Philosophy* (Notre Dame, IN: University of Notre Dame Press), pp. 51–91.
—— (1990b) "Intellect, Will, and the Principle of Alternate Possibilities", in Michael Beaty (ed.), *Christian Theism and the Problems of Philosophy* (Notre Dame, IN: University of Notre Dame Press), pp. 254–285. Reprinted in John Martin Fischer and Mark Ravizza (eds), *Moral Responsibility* (Ithaca, NY: Cornell University Press, 1993), pp. 237–262.
—— (1992) "Aquinas on the Foundations of Knowledge", *Canadian Journal of Philosophy*, supp. vol. 17: 125–158.
—— (1993a) "Aquinas on the Sufferings of Job", in E. Stump (ed.) *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 328–357.

—— (1993b) "Biblical Commentary and Philosophy", in N. Kretzmann and E. Stump (eds), *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 252–268.
—— (1993c) "Intellect, Will, and Alternate Possibilities", reprinted in John Martin Fischer and Mark Ravizza (eds), *Perspectives on Moral Responsibility* (Ithaca, NY: Cornell University Press), pp. 237–262.
—— (1996a) "Libertarian Freedom", in Daniel Howard-Snyder and Jeff Jordan (eds), *Faith, Freedom, and Rationality: Philosophy of Religion Today* (Lanham, MD: Rowman and Littlefield), pp. 73–88.
—— (1996b) "Persons: Identification and Freedom", *Philosophical Topics* 24: 183–214.
—— (1999a) "Ockham on Sensory Cognition", in Paul Spade (ed.), *The Cambridge Companion to Ockham* (Cambridge: Cambridge University Press), pp. 168–203.
—— (1999b) "Word and Incarnation", in Marco Olivetti (ed.), *Incarnation* (Padua: Edam), pp. 543–554.
—— (1999c) "Alternative Possibilities and Moral Responsibility: The Flicker of Freedom", *The Journal of Ethics*, 3: 299–324.
—— (2000) "Transfer Principles and Moral Responsibility" (with John Martin Fischer), *Philosophical Perspectives*, 14: 47–55.
—— (2001) "Augustine on Free Will", in Eleonore Stump and Norman Kretzmann (eds), *The Cambridge Companion to Augustine* (Cambridge: Cambridge University Press), pp. 124–147.
—— (forthcoming) "Moral Responsibility without Alternative Possibilities", in David Widerker and Michael McKenna (eds), *Moral Responsibility and Alternative Possibilities* (Aldershot: Ashgate Press).
Stump, Eleonore and Kretzmann, Norman (1988) "Being and Goodness", in T.V. Morris (ed.), *Divine and Human Action* (Ithaca, NY: Cornell University Press), pp. 281–312.
—— (1992) "Eternity, Awareness, and Action", *Faith and Philosophy* 9: 463–482.
—— (1998) "Eternity and God's Knowledge: A Reply to Shanley", *The American Catholic Philosophical Quarterly* 72: 439–445.
Stump, Eleonore and MacDonald, Scott (eds) (1998) *Aquinas's Moral Theory: Essays in Honor of Norman Kretzmann* (Ithaca, NY: Cornell University Press).
Swinburne, Richard (1979) *The Existence of God* (Oxford: Clarendon Press).
—— (1986) *The Evolution of the Soul* (Oxford: Clarendon Press).
—— (1993) "God and Time", in Eleonore Stump (ed.), *Reasoned Faith* (Ithaca, NY: Cornell University Press), pp. 204–222.
Tachau, Katharine (1982) "The Problem of the *species in medio* at Oxford in the Generation after Ockham", *Mediaeval Studies* 44: 394–443.
—— (1988) *Vision and Certitude in the Age of Ockham: Optics, Epistemology and the Foundations of Semantics 1250–1345* (Leiden: E. J. Brill).
Tilley, Terrence W. (1991) *The Evils of Theodicy* (Washington, DC: Georgetown University Press).
Tomarchio, John (1996) "The Modus Principle in the Writings of Saint Thomas Aquinas", dissertation, The Catholic University of America, Washington, DC.
Torrell, Jean-Pierre O. P. (1993) *Initiation à Saint Thomas d'Aquin: Sa Personne et son Oeuvre* (Introduction to Saint Thomas Aquinas: His Character and His Work) (Fribourg and Paris: Éditions Universitaires and Éditions du Cerf). Translated as

Saint Thomas Aquinas. The Person and his Work, vol. 1, trans. Robert Royal (Washington, DC: Catholic University of America Press).
Tugwell, Simon (1988) *Albert and Thomas: Selected Writings*, The Classics of Western Spirituality (Mahwah, NJ: Paulist Press).
Tuninetti, Luca (1996) *"Per se notum". Die logische Beschaffenheit des Selbstverständlichen im Denken des Thomas von Aquin* (Leiden: E. J. Brill).
Tweedale, Martin (1990) "Mental Representation in Later Medieval Scholasticism", in J. C. Smith (ed.), *Historical Foundations of Cognitive Science* (Dordrecht: Kluwer Academic Publishers), pp. 35–52.
Van Engen, John (1988) *Devotio Moderna: Basic Writings* (New York: Paulist Press).
Van Fraassen, Bas (1984). "Belief and the Will", *The Journal of Philosophy* 81: 235–256.
Van Inwagen, Peter (1978) "The Possibility of Resurrection", *The International Journal for Philosophy of Religion* 9: 114–121.
—— (1983) *An Essay in Free Will* (Oxford: Clarendon Press).
—— (1988) "And Yet There Are Not Three Gods But One God", in Thomas V. Morris (ed.), *Philosophy and the Christian Faith* (Notre Dame, IN: The University of Notre Dame Press), pp. 241–278.
—— (1990) *Material Beings* (Ithaca, NY: Cornell University Press).
—— (1994a) "Composition as Identity", in James Tomberlin (ed.), *Philosophical Perspectives*, vol. 8 (Atascadero, CA: Ridgeview Publishing Co.), pp. 207–219.
—— (1994b) "Not by Confusion of Substance, but by Unity of Person", in A.G. Padgett (ed.), *Reason and the Christian Religion: Essays in Honour of Richard Swinburne* (Oxford: Clarendon Press).
—— (1999) "Incarnation and Christology", *The Routledge Encyclopedia of Philosophy* (London: Routledge).
Van Riet, Georges (1965) *Thomistic Epistemology*, vols 1–2. Trans. Donald G. McCarthy and George E. Hertrich. (St. Louis: B. Herder Book Co.).
Van Steenberghen, F. (1980a) *Le problème de l'existence de Dieu dans les écrits de S. Thomas d'Aquin* (Louvain-la-Neuve: Editions de l'Institut Supérieur de Philosophie).
—— (1980b) *Thomas Aquinas and Radical Aristotelianism* (Washington, DC: Catholic University of America Press).
Velde, Roelf Arend te (1995) *Participation and Substantiality in Thomas Aquinas* (Leiden: E. J. Brill).
Watson, Gary (1975) "Free Agency", *Journal of Philosophy* 72: 205–220.
Weisheipl, James (1983) *Friar Thomas D'Aquino: His Life, Thought, and Works* (Washington, DC: Catholic University of America Press).
Westberg, Daniel (1994a) *Right Practical Reason: Aristotle, Action, and Prudence in Aquinas* (Oxford: Clarendon Press).
—— (1994b) "Did Aquinas Change His Mind about the Will?", *The Thomist* 58: 41–60.
Widerker, David (1995a) "Libertarian Freedom and the Avoidability of Decisions", *Faith and Philosophy* 12: 113–118.
—— (1995b) "Libertarianism and Frankfurt's Attack on the Principle of Alternative Possibilities", *The Philosophical Review* 104: 247–261.
Wierenga, Edward (1983) "Omnipotence Defined", *Philosophy and Phenomenological Research* 43: 363–376.

Williams, Bernard (1973) *Problems of the Self* (New York: Cambridge University Press).
Wilson, Margaret (1978) *Descartes* (London: Routledge and Kegan Paul).
Winters, Barbara (1979) "Willing to Believe", *The Journal of Philosophy* 76: 243–256.
Wippel, John F. (1984) *Metaphysical Themes in Thomas Aquinas* (Washington, DC: Catholic University of America Press).
—— (1987) "Thomas Aquinas and Participation", in J.F. Wippel (ed.) *Studies in Medieval Philosophy* (Washington, DC: Catholic University of America Press).
—— (1989) "Truth in Thomas Aquinas (part I)", *Review of Metaphysics* 43: 295–326.
—— (1990) "Truth in Thomas Aquinas (part II)", *Review of Metaphysics* 43: 543–567.
—— (1993) "Metaphysics", in N. Kretzmann and E. Stump (eds) *The Cambridge Companion to Aquinas* (Cambridge: Cambridge University Press), pp. 85–127.
—— (2000) *The Metaphysical Thought of Thomas Aquinas. From Finite Being to Uncreated Being* (Washington, DC: Catholic University of America Press).
Wolf, Susan (1980) "Asymmetric Freedom", *Journal of Philosophy* 77: 151–166.
Wolterstorff, Nicholas (1975) "God Everlasting", in Clifton J. Orlebeke and Lewis B. Smedes (eds), *God and the Good* (Grand Rapids, MI: Eerdmans), pp. 181–203.
—— (1984) *Reason Within the Bounds of Religion* (Grand Rapids, MI: Eerdmans).
—— (1986) "The Migration of the Theistic Arguments: From Natural Theology to Evidentialist Apologetics", in Robert Audi and William Wainwright (eds), *Rationality and Religious Belief* (Ithaca, NY: Cornell University Press), pp. 38–81.
—— (1991) "Divine Simplicity", in James E. Tomberlin (ed.), *Philosophical Perspectives, 5: Philosophy of Religion*, 1991 (Atascadero, CA: Ridgeview Publishing Company).
—— (1992) "Divine Simplicity", in Kelly James Clark (ed.), *Our Knowledge of God: Essays in Natural and Philosophical Theology* (Dordrecht and Boston: Kluwer Academic Publishers), pp. 133–150.
Yablo, Stephen (1990) "The Real Distinction Between Mind and Body", *The Canadian Journal of Philosophy*, supplementary volume 16: 149–201.
—— (1992) "Mental Causation", *The Philosophical Review* 101: 245–280.
Zagzebski, Linda (1996) *Virtues of the Mind* (Cambridge: Cambridge University Press).
Zimmermann, Albert (1965) *Ontologie oder Metaphysik? Die Diskussion über den Gegenstand der Metaphysik im 13. und 14. Jahrhundert* (Ontology or Metaphysics? The Discussion of the Object of Metaphysics in the Thirteenth and Fourteenth Centuries) (Leiden: E. J. Brill).
Zimmerman, Dean (1998) "Temporary Intrinsics and Presentism", in Peter van Inwagen and Dean Zimmerman (eds), *Metaphysics: The Big Questions* (Malden, MA: Blackwell), pp. 206–219.

CÉDULA DE IDENTIDAD

REPÚBLICA DE CHILE

SERVICIO DE REGISTRO CIVIL E IDENTIFICACIÓN

APELLIDOS

VALENZUELA
BADILLA

NOMBRES

SEBASTIÁN ALONSO

NACIONALIDAD — SEXO

CHILENA — M

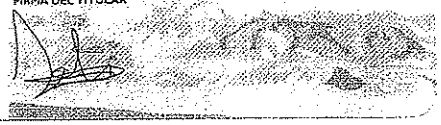
FECHA DE NACIMIENTO — NÚMERO DOCUMENTO

11 MAYO 2003 — 525.971.880

FECHA DE EMISIÓN — FECHA DE VENCIMIENTO

24 NOV 2021 — 11 MAYO 2027

FIRMA DEL TITULAR



RUN **21.300.991-5**