

the human person
A BEGINNER'S
THOMISTIC PSYCHOLOGY



STEVEN J. JENSEN

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A Beginner's Thomistic Psychology

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FOR
RACHEL,
SAM,
AND SARAH

Studium philosophiae non est ad hoc quod
sciatur quid homines senserint, sed qualiter se
habeat veritas rerum.

Thomas Aquinas, *De caelo et mundo*, I, 22

IN MEMORIAM
THOMAS E. JENSEN
1929–2014

Ad perfectam beatitudinem requiritur quod
intellectus pertingat ad ipsam essentiam primae
causae. Et sic perfectionem suam habebit per
unionem ad Deum sicut ad obiectum, in quo
solo beatitudo hominis consistit.

Thomas Aquinas, *Summa theologiae*, I-II, 3, 8

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ABBREVIATIONS

<i>ST</i>	Aquinas, <i>Summa theologiae</i>
<i>SCG</i>	Aquinas, <i>Summa contra Gentiles</i>
<i>QDV</i>	Aquinas, <i>Questiones disputatae de veritate</i>
<i>QDM</i>	Aquinas, <i>Questiones disputatae de malo</i>
<i>QDA</i>	Aquinas, <i>Questiones disputatae de anima</i>
<i>DPN</i>	Aquinas, <i>De principia naturae</i>
<i>Sppl</i>	Aquinas, <i>Supplement to the Summa theologiae</i>
<i>In Meta</i>	Aquinas, <i>Commentary on Aristotle's Metaphysics</i>
<i>In NE</i>	Aquinas, <i>Commentary on Aristotle's Nicomachean Ethics</i>
<i>In DA</i>	Aquinas, <i>Commentary on Aristotle's De anima</i>
<i>Meta</i>	Aristotle, <i>Metaphysics</i>
<i>DA</i>	Aristotle, <i>De anima</i> (or <i>On the Soul</i>)
<i>EN</i>	Aristotle, <i>Nicomachean Ethics</i>

The Human Person

Introduction

The unexamined life is not worth living.

Socrates

“Know thyself.” This call, coming to us from ancient Greek oracles and emphasized by the philosopher Socrates, is more urgent today than in past ages. We have forgotten who we are. We boldly proclaim that we have no human nature. We are nothing more than an intricate collection of chemicals, a cosmic accident that has fortuitously landed upon something we call consciousness or awareness, which brings with it pleasure and pain. We can hope to gather bits of pleasure and avoid as much pain as possible. We should expect little more from life.

Socrates warns us that if we do not come to know ourselves, then we will arrogantly believe that we know more than we do. By knowing himself, Socrates said, he had come to understand what he knows and what he does not know. If we ignore self-knowledge, then we are doomed to believe that our ignorance is knowledge. The worst sort of arrogant self-importance passes itself as humility. “I now know,” the person proclaims, “that reason can lead to no truth. I am better than others, because they suppose themselves to know. I know better. I know

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that knowledge is impossible.” Socrates called this arrogance *misology*, the hatred of reason. Today, we call it skepticism.

By coming to understand ourselves, we recognize that reason is not to be hated. We have minds by which we can grasp the truth. “I can know nothing,” is the cry of someone standing in the darkness. “I can discover the truth,” is the cry of someone who sees the light and reaches out to grasp it. The truth can be reached, but the journey to it is fraught with difficulties and error. Socrates provides a guide to steady the course: know thyself.

Modern philosophers such as John Locke and David Hume, by reducing the human mind to a collection of images, lost what is most important in the human mind. They lost the power to know without images, the power to grasp the very natures of things; they lost the power of reason. This power has become buried deeper and deeper under the barrage of images provided by advanced technologies. We are led to suppose that what we cannot imagine does not exist. We have learned, as Socrates suggests, to hate reason and cherish instead the mere animal power of imagination.

Human beings, when conceived of without the spark of truth within them, become a mere collection of competing emotional desires. When we conceive of ourselves as did Locke or Hume, we are left to seek pleasure and to run from pain, but not much else. We become nothing more than brutes, it seems. As such, we can be treated as brutes. The twentieth century, famous for its loud declarations of human rights, was infamous for its brutal disregard for human dignity. It had lost sight of that dignity, having first lost sight of human nature.

The philosopher Boethius defined a person as an individual of a rational nature. A human being is a person because he is an individual and he has a rational nature. Squirrels are not persons. While they are individuals, they have no rational nature.

Certain modern conceptions have stripped human beings of their rational character, and thus also of their special character as uniquely individual. Human beings have ceased to be persons and have become mere members of the species, led on by their senses rather than by the individual light of their own reason. If we are truly to understand human persons, we must understand their distinctive power of reason.

The ancient cry of Socrates, now but faintly heard amid brazen pronouncements that human beings must create themselves, still calls to us today. We ignore it at our peril. Human beings are faced with a stark choice. Know thyself, or perish. We must rediscover our human nature and our capacity to grasp the truth of the world around us. We will thereby rediscover a divine spark within us. We will discover that we are not simply a collection of competing desires. We are called, together with others, to a higher good.

For this rediscovery, we can seek no better guide than Thomas Aquinas (1225–1274), whose writings eight centuries ago still speak with clarity and insight. We are sometimes led to believe that Aquinas's Middle Ages were times of darkness, suppressing human inquiry and the use of reason. The truth is far otherwise. The people of medieval times had greater trust in the human capacity to discover the truth than we have in our age of cynical skepticism. Reason could find no greater defender than the humble Thomas Aquinas, who declared that the truth must be firmly founded in the arguments of reason. Aquinas believed that even truths of faith, which go beyond the power of reason and which are studied by theology rather than philosophy, are still consistent with reason.

Thomas was tireless in his pursuit of the truth. He eagerly sought new manuscripts, which his sharp mind consumed and retained. He wrote without ceasing. He is believed to have used

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between three and five secretaries at a time, each taking down his dictation for a separate book, as he wrote three to five books at a time. Yet he did not write to advance his own name. He rarely referred to himself, and he humbly accepted correction from others. In the end, he said that all that he had written was like straw compared to what God had revealed to him. From this “straw,” we can learn much about our human nature.

Aquinas is sometimes called the angelic doctor because he wrote so much on the nature of angels. He wrote far more, however, about human beings. With him as our guide, we can set off on the path of rediscovery. We will attempt to discover human nature by examining what human beings do. From human activity, we come to understand human powers or capacities, and by understanding our powers we come to understand the nature that underlies them.

In our age, we have become skeptics because we have come to believe that what is in our minds is unrelated to any world beyond our minds. It will be important, as we delve into our human nature, to discover a mind that is not locked inside itself; to discover, instead, a mind that gazes on the world outside. It will also be important to discover our human desires, so that we can recognize more than a hodgepodge collection of the pursuit of pleasure and the avoidance of pain.

The pursuit of the truth concerning human nature, then, is a pursuit of what has been called psychology, that is, the examination of the human mind. Today, the word “psychology” has a more limited usage. It is reserved for a branch of what we call the sciences. Originally, however—like all of the sciences—“psychology” referred to a branch of philosophy. Indeed, the root meaning of the word, coming from the Greek, means “study of the soul.” Modern science still wishes to study the mind, but it wishes to distance itself from the soul. Our pursuit of the truth

of human nature will delve into the human mind but will not neglect the soul. We will discover that the soul is much more than a mind. The study of the soul is, in fact, the study of the whole human person.

In the title of this book we find our primary focus: the human person. We are seeking to understand human nature. This understanding might be described as a psychology—a study of the soul—for human nature is most properly determined by the soul. Furthermore, we seek our understanding from the thought of Thomas Aquinas, so it may be described as “Thomistic.” Finally, this book is for beginners. It aims only to give beginners a starting point, from which they can pursue other writings if they choose. To keep our attention focused, we will not examine the variety of disputed interpretations of Aquinas. As much as possible, we will present what is undisputed. At times, when using his principles to address contemporary problems, we will be forced to go beyond what Aquinas himself explicitly states.

The book will begin with an examination of the senses, from which—Aquinas thought—all our knowledge originates. The basic understanding of Aquinas’s account of sensation, provided in chapter 2, will allow us to address, in chapter 3, some of the skeptical worries of modern philosophy. Chapter 4 addresses what Aquinas calls the internal senses, that is, mental powers such as imagination, memory, and instinct. Chapter 5 examines the emotions, which we will call “desiring powers”; unlike the senses, which know the world around us, the emotions react to the world. Having examined the human mind this far, we will turn our attention, in chapters 6 through 8, to the so-called mind-body problem. Chapter 6 considers the view of reductive mechanism, while chapter 7 introduces the idea of dualism. Aquinas himself, however, rejected the dichotomy of mind and body, as will become clear in chapter 8. What has been discussed about

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human beings through chapter 8 might equally well be said of animals. The remainder of the book examines what is peculiar to human beings, most importantly reason (in chapters 9 and 10) and the will (in chapters 12 through 14). Chapter 11 uses what has been discovered about reason to address the question of the immortality of the soul, and chapter 15 touches upon the meaning of human life.

The references to Aquinas in footnotes direct the reader to texts of Aquinas that address the ideas being discussed. Most of these citations are from the *Summa theologiae*, a work that was written in the “disputed question” format, as were many other writings of Aquinas. This format investigates a topic (called a “question”) by breaking it down into several more particular questions (called, somewhat confusingly, “articles,” because to articulate something is to present its parts in order). Each article (or particular question) begins with objections to the view of the author (that is, Aquinas). The article then gives a brief statement of the author’s (called the “sed contra” or “on the contrary”). Next, it proceeds to the author’s argument for his own view (called the “response” or the “body”). Finally, it concludes with replies to the initial objections.

Citations to the *Summa* consist of three or four elements. The first element is a Roman numeral, or a combination of Roman numerals: I, I-II, II-II, or III. This element identifies the volume of the *Summa*, either the first part (I), the first part of the second part (I-II), the second part of the second part (II-II), or the third part (III). The second element, consisting of an Arabic numeral, refers to the question within the volume. The third element is another Arabic numeral, referring to the article within the question. Finally, the fourth element, when there is one, consists of the Latin word *ad* and a number, for instance, “ad 3,” which refers to Aquinas’s reply to the numbered objection. For example,

if you run across the citation “ST, I, q. 82, a. 2,” then you should look in the first part of the *Summa*, question 82, article 2.

Several other works of Aquinas also follow this disputed question format, such as the *Disputed Questions on Truth*, the *Disputed Questions on Evil*, and the *Disputed Questions on the Soul*. Some other works cited, which do not follow the disputed question format, are commentaries on the works of Aristotle, which involve a close reading of the writings of Aristotle. These references typically begin with a reference to the book number within the work of Aristotle, which is then followed by a reference to the lecture in Aquinas’s commentary (the commentary was given in lectures covering a breakdown of the material as Aquinas saw fit). Sometimes, these references include a certain number, referring to a paragraph number that appears in many modern editions of the work. The reference “*In NE*, bk. 1, lect. 1” would lead the reader to Aquinas’s commentary on Aristotle’s *Nicomachean Ethics*, book 1, lecture 1. The list of abbreviations for these references appears in the front of this book.

When reading these citations, the reader should be aware that Aquinas often is not addressing the very topic under discussion in the text of this book. Rather, he is addressing some other question, and along the way he brings up a definition or a distinction that applies to the discussion in our text. The reader, then, should approach these texts with care, recognizing that Aquinas often presumes a fair amount of background knowledge, background knowledge not so readily available to the contemporary reader.

Sensation

Even apart from their usefulness, our senses are loved for themselves.

Aristotle

According to the philosopher Aristotle (384–322 BC), all our knowledge begins with the senses. He recognizes that we can understand realities beyond sensation, such as electromagnetic fields, or a human soul, or even God. Nevertheless, these more profound understandings have their origin in lowly sensation. Only by observing the things that we sense do we come to understand those things that are beyond sensation. In short, sensation is the starting point for all knowledge. Consequently, it will be the starting point for our investigation. We would do well to understand sensation first before pursuing more difficult matters, for if we were to begin with an error concerning sensation, from which all our knowledge derives, we might well reach more damaging errors further along.

To sense is to act in some manner. Cats climb trees and they kill mice. They also see mice, hear mice, and taste mice. Climbing, killing, seeing, and hearing are all actions. The act of seeing, then, is in some manner like the act of killing. At the same time, it is very unlike the act of killing. Clarifying the similarities and

differences will help us to understand what Thomas has to say about sensation.

TRANSIENT ACTIONS

Aquinas distinguishes between two quite diverse kinds of actions.¹ Actions like killing, which have come to be called “transient” actions (or sometimes “transitive” actions), move out from the agent (that is, the one acting) into some patient or subject that is acted upon. In contrast, actions like seeing, which have come to be called “immanent” actions, remain within the agent and do not transform any patient or subject acted upon. When the cat kills the mouse, he brings about a change in the mouse. The actions of seeing or hearing the mouse, however, leave the mouse unchanged. We ultimately wish to understand actions like seeing or hearing, but we will begin with the more accessible actions like climbing or killing.

Transient actions have three elements: an agent that acts, a patient or subject that is acted upon, and a form or change that is brought about.² When the cat kills the mouse, the cat is the agent, the mouse is the subject acted upon, and death is the change that is brought about. The simple sentence, “The cat killed the mouse,” expresses all three elements. The subject of the sentence (the cat) expresses the agent that acts; the direct object (the mouse) expresses the subject acted upon; and the verb (killed) expresses the change from living to dead. The verb “kill” expresses the form less clearly than other verbs, such as “heat.” In the sentence “The fire heated the water,” the verb clearly expresses the change of becoming hotter. Less clearly, the verb “kill” is always linked to the change of becoming dead.

1. *In NE*, bk. 1, lect. 1, ¶13; *In Meta*, bk. 9, lect. 8, ¶¶1862–65.

2. *ST*, I, q. 41, a. 1, ad 2.

For some verbs, the direct object does not express the subject acted upon, or at least it does not express *merely* the subject acted upon.³ In the sentence “Brett built a chest,” the direct object (a chest) does not express the subject acted upon; rather, it expresses the result of the action. What is acted upon is the wood from which the chest is built. This wood is the subject that changes, and the change introduced is a certain order or structure. The chest, which is the wood together with a certain order, is more than the subject acted upon; it is the result of the action.

The result of an action is the combination of the change and the subject acted upon: it is hot water or a dead mouse. Typically, the result is expressed through the combination of the verb and the direct object, even as the result of “hot water” is expressed by “heated the water.” For the verb “build,” however, the direct object by itself expresses the result, and the subject acted upon remains hidden, as only one component of the result. Likewise, in the sentence “Anna draws a picture,” the direct object (a picture) expresses the result of the action, which is a subject (paper) together with some form or change (certain ordered shapes).

THREE CHARACTERISTICS OF TRANSIENT ACTIONS

We may define a transient action, then, as an agent giving rise to some change in a patient. Before we examine in what manner immanent actions might be different, we will consider three important features of transient actions. First, the agent makes the patient like itself. Second, the agent acts by way of some form or actuality. Third, the agent’s action is heading to some final destination or endpoint.⁴

3. *ST*, I, q. 37, a. 2, ad 2.

4. First feature: *ST*, I, q. 6, a. 1; second feature: *ST*, I, q. 5, a. 5; third feature: *ST*, I, q. 2, a. 3; I-II, q. 1, a. 2.

Sometimes it is obvious that the agent makes the patient like itself. The fire is hot, and it makes the water hot. A cat that begets kittens brings about an effect like itself. When the cue ball strikes the eight ball, the moving cue ball imparts motion to the eight ball. In the latter example, it is worth noting that the eight ball, which is at rest, also acts upon the cue ball, imparting some of its own rest, so that the cue ball becomes like the eight ball, at least by moving less quickly (or perhaps in an opposite direction).

For other actions, it is not immediately clear how the agent makes the patient like itself. The cat is alive, and yet it makes the mouse to be dead. Brett is not at all like the chest he brings about. In the latter case, however, we can see that Brett does have within himself something that is like the effect he brings about, for he has an idea of the chest, and he makes the wood like this idea.⁵ Human actions often fit this pattern. We have some idea and we change the things around us to become like the idea. Anna has an image of a horse in her head, for instance, and when she draws, she changes the paper to be like this mental image.

A similar point could be made concerning the cat. The cat has some idea of what it wants the mouse to be like—perhaps not exactly an idea of its being “dead” but rather of its being immobile or some such thing—and the cat introduces this change into the mouse. For conscious agents, then, when the agent makes the patient like itself, the agent might be making the patient not like its physical self but like an idea in its mind.

It is still far from clear, however, that the agent always makes the patient like itself. Consider a fire that melts some wax and hardens some clay. The fire itself seems to be neither soft nor hard, yet it brings about these opposite effects in two diverse subjects. In what manner, then, does it make the wax and the clay like itself?

5. *ST*, I, q. 44, a. 3, ad 1.

We must distinguish between a primary effect of an agent (also called a direct effect) and a secondary effect (also called an indirect effect). Primarily, the fire heats. Secondarily, it softens and it hardens. It directly brings about heat, which is indeed like itself. Once the heat is introduced into the wax and into the clay, then the secondary effects of softening and hardening come about. They do so indirectly, by way of the heat.

When an agent makes the patient like itself, it does so (or it *must* do so) only with regard to the primary effect.⁶ Secondary effects can be multiple and diverse, entirely different from the agent. The cue ball imparts motion into the eight ball, which then jumps onto the floor and is chipped. The cue ball makes the eight ball like itself with regard to motion, but the secondary effect (of being chipped) finds nothing corresponding in the cue ball.

The first aspect of transient actions—that the agent makes the patient like itself—helps us to perceive the second: that the agent acts by way of some form. The fire heats by first of all being hot; the cue ball moves by first of all being in motion; the cat begets kittens by first of all being a cat; and the carpenter builds the chest by first of all having some idea of it.

The fundamental idea here is that an agent cannot give what it does not have.⁷ I cannot give you a million dollars if I do not have a million dollars. The fire cannot give heat unless it first has heat. What the agent itself gives is the primary effect, and it must possess something by which it gives this effect. Secondary effects are different. The agent need possess nothing corresponding to secondary effects. The fire does not need to be soft and it does not need to be hard; it need only be hot. Secondary effects do not arise from the agent; rather, they arise by way of the primary effect.

6. *QDM*, q. 1, a. 3.

7. *ST*, I, q. 4, a. 2.

Most properly, the action of the agent is the giving of some primary effect. This primary effect must in some manner already reside in the agent, although it need not exist in the agent in some literal sense, even as the chest does not exist in the carpenter literally. From the form the agent possesses, the agent can act to bring about some similar form in the patient. Once the form has come to be in the patient, it can then bring about all sorts of other changes, such as softening or hardening.

The reader may have observed that we have become quite flexible in our use of the word “form.” We began by using it to refer to some change that comes about in the patient, even as heat comes to be in water. We are now using it to refer to some actuality by which the agent acts, even as fire heats by way of the heat it already possesses.

This flexibility is no accident. The word is being used to refer to some definite characteristic of a thing. Its initial meaning is “shape”: a definite characteristic by which we identify many objects. The same clay might be shaped as a vase or as a pot, and the shape—or “form”—gives a definite characteristic to the clay. The shape gives the clay the form of a vase or of a pot. Similarly, the water that is heated takes on a definite characteristic through the form of heat. In addition, the fire itself has this definite characteristic, so we can also speak of a form of heat in the fire. The potter, as well, can be said to have a form; in his idea of the vase he shapes, he has a definite characteristic by which he acts. This flexibility of the word “form” will continue, being extended even further than at present.

The third characteristic of transient actions—that they are headed to some destination or endpoint—follows upon the first and second. The act of heating is ordered to the endpoint of being hot. The act of killing is headed to the endpoint of death. The act of building is directed to some structure. And so on. Given

that the agent has some form that it passes on to the subject, it follows that the action is headed to the form's coming to be in the subject. We cannot identify an action unless we identify the endpoint to which it is headed. We could not distinguish the act of heating from the act of killing if we did not know that heating is moving to the end of heat and killing is moving to the end of death.

We are now poised to examine immanent actions—which is the goal to which we are heading—for we want to understand sensation, and sensation is a particular kind of immanent action. Immanent actions can be best understood in contrast to transient actions.

IMMANENT ACTIONS

In the sentence “The cat sees the mouse,” we might expect to find the three elements of action: agent, patient, and form. The cat unquestionably appears to be the agent—that is, the one who acts—and the mouse appears to be the one acted upon—that is, the patient. We run into trouble, however, when we try to identify the form. What is the change that the cat introduces into the mouse? Nothing, it would seem. The mouse does not change. Of course, the mouse might happen to change. It might become afraid, it might turn and run, and so on. These changes, however, are not direct changes introduced by the act of the cat seeing the mouse; rather, they come about as a consequence of the mouse becoming aware of the cat.

The point might be perceived more readily with an inanimate object. When Sarah sees the table, she does not thereby change the table. Seeing the table introduces no change into the table. Immanent actions, then, appear to lack the third element of action, that is, form.

If immanent actions lack the third element, however, it is far from clear how they can have the second. The patient is the subject acted upon, but the mouse is not in fact acted upon, for it does not change. Neither is the table acted upon, for it does not change. The word “patient” indicates something that undergoes some change or process. As such, the word cannot be applied to the mouse or the table. Instead, another word might capture what we perceive in the mouse and in the table: they are both “objects” of the act of seeing. Immanent actions, then, do not have patients acted upon, but they do have objects to which the action is directed. The cat’s act of seeing is directed to the object of the mouse.

The word “object” seems more flexible than the word “patient,” for it can be applied to transient actions as well as immanent actions. The mouse is the object both of the act of seeing and of the act of killing. Transient actions are directed onto the patient, and as such the patient can be called an object, for an object is nothing other than that to which an action is directed. The word “object,” however, also applies to immanent actions. The act of seeing is directed to the table, although the act does not change the table; as such, the table is the “object” of the act of seeing.

Of the three elements of actions, then, it initially seems that immanent actions retain only the first, an agent that acts. Nevertheless, these actions have something corresponding to the second element, namely, an object to which the action is directed. We will now see that they also have something corresponding to the third element, a form or change that comes about.

In immanent actions, the object does not change, at least not precisely insofar as it is “acted upon.” Just from Sarah’s act of seeing, for instance, the table is not changed. Still, in immanent actions, something does change. Although the object does not

change, the agent itself changes. When Sarah sees the table, she herself is different through the very act of seeing. There is something *new* in her when she sees. The exact nature of this “something new” will prove difficult to pin down. Nevertheless, it is undeniable. The agent that sees is in some manner different by the very act of seeing, although the object she sees remains the same.

We can begin to understand this “something new” by considering the first characteristic of transient actions. We have seen that in transient actions the agent makes the patient like itself, even as the hot fire makes water to become hot. The same cannot be said of immanent actions, for these actions have no patient; they in no way change the object.⁸ Nevertheless, immanent actions have something corresponding to the first characteristic of transient actions, but the characteristic becomes inverted. The agent does not make the object like itself; rather, the agent makes itself like the object.⁹ When Sarah sees the table, she makes herself like the table, or we might say she receives a likeness of the table. If the table is brown, she now has a sensation of “brownness.” The “something new” in her is in some manner like the object she perceives.

The point needs clarification, for sensation is rather complex. While sensation itself is an immanent action, it involves some prior or contemporaneous transient action, and we must be careful lest we confuse the two. Suppose that Sam puts his hand up to a fire and feels its heat. In his act of feeling, he comes to be like the fire, that is, he has some sensation of “heat.” At the same time—and essential to the act of feeling—his hand becomes physically hot. This physical heat, however, is not the likeness of heat that Sam takes on in the immanent act of feeling. Rather, it is the effect of a distinct and prior transient action, in which the

8. SCG, bk. 1, c. 100, ¶3.

9. ST, I, q. 85, a. 2.

fire (the agent) acts upon Sam's hand (the patient). Suppose that before Sam places his hand up to the fire, it has been numbed with an anesthetic. His hand still becomes physically hot, but he does not actually feel the heat. Becoming physically hot, then, is not the same thing as feeling heat, although it is a necessary precursor to the act of feeling heat.

The act of feeling, it seems, requires two actions, one transient and the other immanent, but only the latter is the actual act of feeling.¹⁰ In the transient action, the fire is the agent and Sam's hand is the patient. The fire makes the hand to be like itself, that is, the fire makes the hand to be hot. In the immanent action, Sam himself is the agent, and he takes on the likeness of the fire. Of course, he has already become physically like the fire (as a result of the transient act of the fire), but when he feels the heat he becomes like the fire in a new way, in a kind of "nonphysical" way.¹¹ His experience of heat is like heat, but it is not actual physical heat.

The initial transient action is evident for the act of feeling heat. Thomas himself did not think that the physical reception of the form was required for the other senses (except taste).¹² With our current knowledge of sensation, however, there may be good reasons to suppose that these other senses, as well, involve a prior transient activity, in which the form is first received physically.¹³

The point is evident in the act of hearing sounds. The external sound acts upon the sensory hair follicles, which themselves take on vibrations or sounds. The actual vibration of these follicles, however, is not the same thing as the act of hearing sound, for damaged follicles can vibrate yet the person does not hear.

10. *ST*, I, q. 84, a. 6; I, q. 85, a. 2, ad 3.

11. *ST*, I, q. 78, a. 3.

12. *ST*, I, q. 78, a. 3; for a possible conflicting text see *ST*, I, q. 75, a. 3.

13. *ST*, I, q. 75, a. 3.

The agent for the immanent act of hearing is not the external sound; rather, it is the person who hears. He has physically taken on the sound (as the patient of a transient action), but in his act of hearing he takes it on in a nonphysical way. As an agent of the act of hearing, he receives the likeness of the object.

For the act of sight the prior transient action can be perceived—but less clearly—as long as we distinguish between colors in potentiality and colors in actuality. The table is colored brown, but in a darkened room the color is only a disposition, which becomes actualized through light. Actual color—as opposed to the mere disposition toward color—has an element of interacting with the environment. As we would say today, it is not the object in isolation; rather, it is the object reflecting certain light waves. Similarly, in the cones and rods in the retina, certain proteins have color, but this color remains only a disposition until light shines upon it. Then the protein becomes actually colored—actually blue or red or green—and in this manner the eye physically takes on the color of the object. The table reflects light which then acts upon the proteins in the retina, making these proteins to become actually colored.

The senses of taste and smell are a more difficult matter. In what manner does the flavor or odor physically act upon the sense organ to give it also that flavor or odor? The compounds on the tongue bind with certain proteins within the taste buds, and these proteins are then modified. Is this modification a transformation into something that has the flavor of the bound chemical? The matter is far from clear. Nevertheless, these sensations as well—it seems fair to presume—must involve a prior transient action, in which the object sensed (acting by way of a flavor or an odor) is the agent that physically transforms the sense organ, making it to be physically like itself; the chemoreceptors possess some proteins that take on the relevant attribute. After having

been physically transformed, the person then—in the act of sensing—comes to be like the object in a nonphysical way.

NONPHYSICAL LIKENESS

When the agent comes to be like the object, the change that takes place in him—the form that he takes on—can be described as “nonphysical.” This description is simply the denial of the physical likeness. It provides little positive content. To put some flesh on this negative description, we must consider other ways in which immanent actions differ from transient actions.

Following Aristotle, Aquinas claims that in transient actions the form comes to be successively.¹⁴ In the water, for instance, the form of heat comes to be by degrees. Likewise, when the chest is being built, the wood takes on the appropriate structure bit by bit, not all at once. In contrast, the nonphysical form in immanent actions comes to be all at once, complete in an instant. There is not some degree of “feeling heat” that slowly increases. The person is either feeling heat or he is not feeling heat.

This point is made more complicated because many of the objects that we sense are changing with time. Sometimes the very nature of the object involves a series of changes, as with sounds. We do not hear a birdsong all at once, for instance, because by its very nature a birdsong does not exist all at once but comes to be successively. We must distinguish, then, between the immanent activity of sensing and the object sensed. The immanent activity itself does not come to be gradually, but the object sensed might come to be successively. As Krystyna listens to a birdsong, her act of hearing does not come to be successively, as if she were only partially hearing and gradually coming to the full act of hearing. What comes to be successively is the object she hears.

14. *ST*, I, q. 18, a. 3, ad 1.

A closely related point concerns the cessation of action. A transient action continues as long as the form is successively coming to be; when the form is complete, the action ceases. The act of building continues as long as the structure is coming to be in the wood; when the form of the chest is complete, the action of building ceases. In contrast, an immanent action continues even though the form is complete. When Sarah sees the table, the likeness of the table is complete in her (since it does not come to be successively and by degrees) and yet the action of seeing continues.

A sign of this last point is the usage of the present tense and the perfect tense.¹⁵ The present tense indicates an ongoing action, while the perfect tense expresses an action that is not ongoing but is completed. “Brett is building the chest,” indicates an ongoing action of building. In contrast, “Brett has built the chest,” indicates a completed action. Aristotle observes that the present tense and perfect tense behave differently for transient actions and immanent actions. For transient actions, the present tense and the perfect tense are inconsistent with one another, but for immanent actions, they may coincide. We cannot say of Brett both that he is building the chest and that he has built the chest. If he has built the chest, then the form of the chest is complete, his action has ceased, and he has no ongoing action of building. In contrast, we can say that Sarah is seeing the table and also that she has seen the table. The two can coincide because, although the form is complete, the action of seeing continues. For this reason, Aquinas calls immanent actions “complete actions,” while transient actions are “incomplete,” that is, they exist only insofar as the form is not yet complete.¹⁶

This test has its limitations. Sometimes transient actions take both the present and the perfect tenses simultaneously. Walking

15. Aristotle, *Meta*, bk. 9, c. 6, 1048b30.

16. *ST*, I, q. 14, a. 2, ad 2.

is a transient action; nevertheless, we can say (concerning the same walk) both, “Rachel is walking,” and, “Rachel has walked.” The reason for this anomaly is connected to another difference between transient and immanent actions. As we have seen, transient actions are directed to some endpoint. The same can also be said of immanent actions. Indeed, for both, the endpoint is the form. For transient actions, however, the form is outside the action itself and comes to be successively. In the act of heating, for instance, the form is the heat that comes to be in the water. In contrast, for immanent actions, the form is not distinct from the action itself, and it comes to be all at once. When Sarah sees the table, the form is the likeness that she receives, and this likeness is nothing other than her seeing of the table. In some sense, then, the end of an immanent action is the action itself.¹⁷

If Rachel is walking to the ice cream shop, then the end of her action is a state separate from the action itself, namely, the state of her being in the ice cream shop. Consequently, we do not say, “She is walking to the ice cream shop,” and also, “She has walked to the ice cream shop.” The present and perfect tenses are incompatible. If she *is walking* to the ice cream shop, then she *has not yet walked* to the ice cream shop. On the other hand, if Rachel is walking for enjoyment—such that the act of walking is its own end—then we naturally say both, “Rachel is walking,” and, “Rachel has walked.”

Let us consider one final difference between transient actions and immanent actions. By its nature, any action is directed beyond itself. Just by itself, for instance, heat is directed to nothing beyond itself; in contrast, the *act of heating* is directed to heat coming to be in the subject. Transient actions are directed to the coming to be of some form in some subject, and this form is also the endpoint of the transient action.

17. *ST*, I, q. 18, a. 3, ad 1; *QDP*, q. 10, a. 1; *In Meta*, bk. 9, c. 8, ¶¶1862–65.

As we have seen, the endpoint of immanent actions is also the form, but the form is not distinct from the action itself. Nevertheless, immanent actions, like transient actions, are directed to something beyond themselves, for immanent actions “concern” some object. When Sarah sees the table, her act of seeing is directed to the table. The table is not the end of her action, but it is the *object* of her action. Immanent actions, then, are directed to an object beyond themselves. This direction has sometimes been described as “intentionality,” which might also be described as “aboutness.” In short, immanent actions *refer* to something.

This last point gives us the characterization of knowledge as becoming another while remaining oneself.¹⁸ When the fire heats the water, it makes the water like itself. In some manner, then, the water becomes “another”: it becomes hot, like the fire, which it was not previously. Likewise, when the fire heats Sam’s hand, then his hand becomes “another.” Neither the water nor Sam’s hands, however, becomes another *while yet remaining itself*. Rather, both become physically other; both become physically hot.

Nonphysical likeness is different. Just as Sam’s hand becomes like the fire (in being hot), so does his mind also take on the likeness of heat. His mind, then, becomes another; it becomes like the fire. His mind, however, does not take on the physical likeness of heat. It takes on the likeness of heat while not actually becoming hot. His mind, then, becomes another while still remaining itself. The physical heat resides in the fire, but this same form, “heat,” also resides in Sam, except in a nonphysical manner. The nonphysical heat within Sam concerns, or is “about,” the heat that exists within the fire. It is “another”—that is, the heat in the fire—while yet remaining itself. It concerns physical heat but is not itself physically hot.

18. *ST*, I, q. 14, a. 1.

SENSE REALISM

Aquinas's view of sensation might be described as sense realism, that is, he thinks that our senses truly reflect the world around us. Sensation is like the object sensed. Sam's experience of heat is truly like the heat in the fire, for the agent becomes like the object. If sensation is indeed the beginning of all our knowledge, then it must reflect the world. Otherwise, our knowledge would be only castles in the clouds, so to speak. It would have no link to the world around us.

Is Aquinas correct in asserting sense realism? It may seem that he is wrong. Our senses do not necessarily reflect the world around us. The moon looks small to us, for instance, but in reality it is enormous. Again, we sometimes see illusions. When we are out driving on a hot day, for instance, the road ahead of us might appear to be covered with water, when in fact it is perfectly dry. A color-blind person might mistake green for red. Even without color blindness, we often have mistaken perceptions. We see someone and suppose her to be an old friend, but, when we approach our old friend, we discover that she is a stranger. Given these many errors of perception, how can Aquinas maintain that the senses truly reflect the world around us?

Perhaps we should abandon the Aristotelian idea that our knowledge begins with the senses. Perhaps we can find some other foundation upon which to build our knowledge. Such was the desire of René Descartes, who thought the senses unreliable. He sought to establish our knowledge not upon the senses but upon interior thought itself, and he thereby initiated what has come to be called modern philosophy. In the next chapter, we will examine the merits of this philosophical project.

Skepticism

By convention sweet, by convention bitter; by convention hot, by convention cold; by convention color; but in reality: atoms and the void.

Democritus

As René Descartes (1596–1650) sat before the fireside, he doubted whether the fire really existed; indeed, he doubted whether he even possessed a body by which he could sense the room around him. Thereby, Descartes launched a new approach to philosophy that undermined the older Aristotelian approach, according to which all of our knowledge begins with our sensations. Descartes thought that the senses do not get us in touch with the outside world. Rather, we must first establish, by way of arguments, the very existence of an external world. We cannot begin with the world; we must begin only with our minds. For Descartes, then, the subject matter of philosophical inquiry is the content of our minds.

RENÉ DESCARTES

In his program of doubt, Descartes wonders whether our senses really perceive the world around us (the account of Des-

Cartes's ideas that follows is largely taken from his *Meditations*). Is his perception of wax really a perception of something beyond his mind, or is it merely imagery locked within his own mind, having no connection to an outside world? It seems that he cannot trust his senses, for they have deceived him before. The moon appears small to him, but he knows by intellectual argument that the moon is very large. His senses, therefore, cannot be reliably trusted to reflect the world around him. Indeed, the entire external world might be an invention of his mind. Perhaps he is dreaming, and the fire before him is nothing other than a phantom of his imagination. Or perhaps Descartes is the victim of an evil genius, who is so powerful that he can create within Descartes's mind whatever illusion he fancies. If so, then all that Descartes has believed from his senses is cast into doubt.

The "brain in a vat" hypothesis, introduced by Hilary Putnam and popularized by the Matrix movies, is a modern version of the evil genius. According to this hypothesis, you could be a brain in a vat in some laboratory. Scientists stimulate your neurons, causing you to experience the (fictional) room around you with all its objects. The objects and the room do not really exist, but they seem real and substantial to you. If the brain in the vat theory is a live possibility, then how can you ever trust your senses?

Descartes begins with doubt, but he thinks that he can reach certainty. Even if he is currently being deceived by an evil genius, he knows that he has thoughts and ideas. The very ideas with which the genius deceives him are still his own (Descartes's) ideas. To be deceived is still to think. And if Descartes thinks, then he must exist. The evil genius cannot deceive him on this point. Expressed in Latin, the argument is "*Cogito, ergo sum*": "I think, therefore I am."

When Descartes says that he must exist, he means only that

his mind must exist. The existence of his body still remains in doubt. It will be a long journey before Descartes can get any kind of limited assurance of his body or of any other material objects. From the springboard of his mind and his ideas, he must first venture out to the existence of God, and from the existence of God he must move to the certainty of those ideas that appear clear and distinct to him. Only then can he get some idea of material objects existing outside his mind. Descartes, then, is ultimately not a skeptic. Nevertheless, he remains a skeptic with regard to the senses. Unlike Aquinas, he does not uphold sense realism, which maintains that our senses provide direct contact with the world around us.

JOHN LOCKE

In various ways, subsequent philosophers have begun with the Cartesian supposition that the first starting point of all inquiry is the content of our minds. If ever we are to know the world around us (these philosophers say), we must begin with our minds and provide some argument to establish an external world. The philosopher John Locke (1632–1704) asserts that the first thing we know is our ideas, and the first among these ideas are those found within sensation (the account of Locke's ideas that follows is largely taken from his *Essay Concerning Human Understanding*).

When examining sensible qualities, he distinguishes between two sorts, which he calls primary and secondary. Primary qualities include extension, shape, and movement. Secondary qualities include sound, color, and heat. Primary qualities can be observed by more than one sensation. We can know the shape of an object, for instance, not only through sight but also through touch; we can know the movement of an object through sight, touch, and

hearing. In contrast, secondary qualities cannot be confirmed by another sense. Colors are sensed only through sight, and sounds are sensed only through hearing.

Since secondary qualities cannot be confirmed, Locke supposes that they are found only in the mind, and that nothing in the world corresponds to them. Objects are not really colored, and while there are rapid movements called vibrations (which are primary qualities), there is no quality of “sound” outside the mind, nor is there any quality of being “hot.” In contrast, we can confirm primary qualities with multiple sensations; consequently, we may conclude that these qualities are not only in the mind; they have some real corresponding quality in the world outside our minds.

We sometimes hear the question, “If a tree falls in the woods and there is no one around to hear it, then does it make a sound?” According to Locke, it seems, the answer must be “No.” Indeed, the tree does not really make a sound even when someone is around to hear it, but in that latter case at least a “sound” appears in the mind of the observer. Locke recognizes that, with or without an observer, the tree causes vibrations, which are primary qualities.

Just as Descartes found reasons to doubt his senses, so Locke finds reasons to doubt secondary qualities. Blood looks red to the unaided eye, but when examined under the microscope, it appears largely transparent or dull colored. Water that feels luke-warm might seem scalding hot to Sam, who has first placed his hand in a bucket of ice water.

This skepticism with regard to secondary qualities is sometimes expressed today through questions such as the following: “When you see a red ball, how do you know that others have the same experience of ‘red’?” Perhaps what seems red to you is experienced as something like blue to Krystyna. Of course, she

labels her experience by the word “red,” but that merely indicates that you and she have common words, not that you both have common experiences underlying the words.

Locke presents us with what might be called the “mind in a box” view of things. Inside the box is our mind’s eye. Before this mind’s eye float various ideas—including the ideas of sensation—which we then know. Outside the box is the “real world,” but we have no direct access to it. We know immediately only what is inside the box, that is, our minds and our ideas. Nevertheless, we can argue to the existence of some things outside the box. When we find certain sensations confirmed (primary qualities), we can conclude that they exist not only within the box but also outside the box.

GEORGE BERKELEY

Following upon Locke, the philosopher George Berkeley (1685–1753) takes the bold step of denying all realities beyond the mind for both primary and secondary qualities (the account of Berkeley’s ideas that follows is largely taken from his *Three Dialogues Between Hulas and Pholonous* and his *Treatise Concerning the Principles of Human Knowledge*). Indeed, he denies the existence of all material objects outside the mind. The only things that exist, according to Berkeley, are minds and the ideas within them. Nothing exists outside of minds. Some things do exist outside of some particular mind. Outside the mind of Anna, for instance, can be found other minds, such as the mind of Louis and the mind of Clare. Nowhere, however, does anything exist outside of some mind or other.

Why does Berkeley reach such a counterintuitive conclusion? He observes correctly that Locke had no basis for asserting the existence of primary qualities. Just because a quality is

confirmed by multiple sources within the box, it does not follow that this quality can be found outside the box. If you are in a theater (corresponding to the box) and a car races across the screen while simultaneously the multiple speakers provide a sound that moves across the theater, does it follow that there is really a moving car right now outside the theater? Of course not. Indeed, the movie might be animated, for which there is no corresponding car at all, whether at present or in the past.

Likewise, just because we see the shape of a ball and also feel the shape of a ball, it does not follow that the shape is outside our minds. More precisely, this conclusion does not follow *given* Locke's supposition (which Berkeley shares) that we know our ideas first of all. What we know immediately is simply a colored shape *in our minds* and a textured shape *in our minds*. Two shapes within our minds that confirm one another do not amount to a shape outside our minds.

Once this conclusion has been granted, the rest of Berkeley's conclusions follow naturally. We have no good reason to suppose that colors, sounds, shapes, and movements exist outside our minds. By what possible reason, then, can we suppose that cars and balls exist outside our minds? The only basis for asserting the existence of these material objects is by way of our sensations, but if our sensations are locked within the box of the mind, then they provide no basis to suppose that material objects exist outside our minds.

Berkeley's conclusion is stronger: we have good reason to suppose that material objects *do not* exist. What is the basis of this stronger claim? Common sense, says Berkeley. Common sense demands that we deny the existence of material objects. When we begin to assert material objects, we are soon led into hopeless skepticism, the opposite of common sense.

Why does Berkeley think that common sense demands such

a nonsensical conclusion? Because common sense affirms the reliability of the senses. Things are as they seem to us. According to the Lockean supposition, however, what seems real to us is nothing other than the sensations *within our minds*. Because Locke asserts a “real” ball beyond the sensation of it—claims Berkeley—Locke is forced to deny that what seems to us is true. The ball seems to be red, and yet Locke says it is not. In short, Locke’s view leads to skepticism concerning our senses.

Berkeley wishes to reject this skepticism. The ball is, he says, just as it seems. As long as we separate the ball in the mind from the real material ball, skepticism is inevitable, since the two do not correspond to one another. Therefore, we must reject the separation. There is no material ball separate from the ball in the mind. There is only the ball in the mind. The ball seems red and it is red, because the ball is simply an idea in our minds and nothing else. Such is the price we must pay, it seems, for affirming the reliability of the senses.

In short, Berkeley is more consistent than Locke. Both begin with the supposition that we first of all know the ideas within our minds. Locke incorrectly supposes that he can then argue out to the existence of things beyond his mind (primary qualities). Berkeley is content to recognize that if we begin within our minds, then we must remain within our minds. In no way can we get beyond the box of our minds.

Berkeley does cling to some remaining inconsistencies. Berkeley insists that we can know the existence of minds. Anna, for instance, is aware not only of her own ideas; she is also aware of her mind, by which she knows these ideas. Indeed, she is aware that there are other minds, such as the divine mind or other human minds. The philosopher David Hume (1711–1776) would eliminate these remaining inconsistencies.

DAVID HUME

In some ways, David Hume is more restrained than Berkeley (the account of Hume's ideas that follows is largely taken from his *Treatise of Human Nature* and *Enquiry Concerning Human Understanding*). While Berkeley denies the existence of material objects outside our minds, Hume merely observes that we have no good reason to believe in material objects. Perhaps they exist. Perhaps not. We will never know, because all we know are the ideas within our minds. Hume also observes, however, that our sensations give us no good reason to believe in the existence of other minds. Indeed, they give us no good reason to believe in our own minds.

This last conclusion follows from another strain of thought that began with Descartes. First, Descartes distinguishes between a substance and its properties. A rock is the substance; its color, shape, weight, and so on, are its properties. A tree is the substance; its movements, temperature, and texture are its properties. This unproblematic distinction is then viewed through the lens of Descartes's skepticism of the senses. The senses, says Descartes, perceive properties and only properties. When we see a ball, we see its shape, color, and movement, but we do not see the ball itself. Still, we are aware of the ball itself. This awareness does not come through the senses; rather, it comes from a mind with powers higher than the senses. Powers such as the intellect—a kind of spiritual knowing power—can grasp the nature of substance.

This reasoning becomes transformed in the mind of Locke, who thinks (unlike Descartes) that all of our ideas must begin with the senses and be reduced to the senses. Thus, he believes in no intellect or "higher mind" that can directly perceive substance. He is left to conclude that he has no clear idea of substance. It is, he says, "Something I know not what."

Berkeley, wishing to sweep the mind of all such vague skeptical

nonsense, simply denies the existence of substance. If we have no idea what it is, then why suppose that it exists at all? What we call “substance” is simply a collection of properties, a collection that we group together by way of names. We use the name “rock” to group together the various properties that we associate with rocks.

Berkeley is not entirely consistent on this point, however, for he seems to conceive the mind as a certain kind of substance and its ideas as something like properties. What Berkeley denies, then, is not substance as such; he denies *material* substance. The spiritual substances of minds still populate Berkeley’s universe.

Hume, ever faithful to the principle that all our ideas must be reduced to sensible ideas, eliminates even the spiritual substances of minds, including his own mind. In some sense, of course, Hume needs a mind. His mind, however, is not a substance; rather, Hume’s mind (and Hume himself) is simply a string or collection of ideas. Hume, then, has evidently undone Descartes’s *cogito* argument. Descartes initiates the train of modern thought with, “I think, therefore I am”; Hume closes it with, “I think.”

The elimination of all substances has another foundation besides the reduction of all ideas to sensation. It relies upon Hume’s notion of causation, which finds its roots in Locke’s thought. According to Locke, by observing new ideas and recognizing patterns we come to the notion of the power to change or the power to be changed; we conclude that similar changes will arise from similar causes. Upon observing the idea of smoke, which arises from the idea of fire, we conclude that smoke will consistently arise from fire. Berkeley makes similar points, except that the notion of “arising” is eliminated. We need not say that smoke arises from fire, but simply that smoke consistently follows upon fire.

Hume is not dramatically different from Berkeley except in the details he provides. Causality is reduced to a succession of two ideas, together with the mental expectation that the second

will follow upon the first. Fire “causes” smoke because we have experienced the one following the other and we have formed a strong expectation of the two being connected. This analysis seems to ignore the fact that often we experience effects and only then sense the cause. Innumerable times we experience smoke and only later the fire that causes it, yet we do not call the smoke the cause of the fire.

At any rate, Hume provides an acid test for causality: it must always involve the repetition of one idea following another. We do not have an idea of substance upon which follows the idea of its properties; indeed, we have no sensation of substance, since (following Descartes) we experience only properties and (not following Descartes) our ideas never get beyond sensation. We experience fire and then smoke, fire and then smoke, fire and then smoke, and eventually we expect that smoke will follow upon fire, so we say that fire is the cause of smoke. In contrast, we do not first experience “substance” and then properties, “substance” and then properties. . . . Indeed, we do not experience “substance” at all. In no way, then, can “substance” be the cause of properties. But we have no other reason—claims Hume—for supposing that substances exist, except that we presume they cause properties. If we believe in substances, then, we do so with no philosophical foundation.

SENSE REALISM

Descartes’s original project of undermining the senses and providing some other foundation to our knowledge has not borne propitious results. It has led to doubt of the very foundation that Descartes provided, namely, the knowledge of his own existence as a thinking thing. By the time we reach Hume, “thinking things” have been thrown into the dustbin of past fan-

tasies. We might well wonder, then, whether Descartes's project of doubting the senses was misguided from the start. Perhaps we should trust our senses, rather than doubt them. Perhaps Aristotle was right. Perhaps we must take the data of the senses as the starting point from which all our knowledge must arise.

But how can we trust our senses? Isn't Descartes correct? Our senses have deceived us in the past and they continue to deceive us now. Is it not foolishly naïve to suppose that our senses consistently reflect the world around us? Given Descartes's objections, Aquinas's sense realism appears rather unrealistic. How can Aquinas provide the tools to get outside the box of our minds?

Berkeley, it seems, is correct. No tool in heaven or earth can lift us outside the box of our minds. We can avoid being locked in the box only by refusing to get in. If we accept Locke's dictum that the first things we know are our ideas, then we will be left with Berkeley and Hume; we will be left with no way to get outside our minds.

The physicist Arthur Eddington (1882–1944) once discussed two tables: the familiar table and the scientific table. The familiar table is the table we sense, which has extension, takes up space, is substantial, has color, and so on. The scientific table is mostly empty space, filled only by tiny moving electrons; it is not substantial, has no color, and so on. Most importantly, the familiar table is only in our heads, while the scientific table is the real table. Eddington, it seems, had adopted the divide proposed centuries earlier by John Locke. On the one hand, there is what we sense, which is only in our heads; on the other hand, there is the real world, which we can reach by way of argumentation.

Berkeley's arguments against Locke, however, work just as effectively against Eddington. If science begins and ends with the senses, as Eddington concedes, then science will explain only what the senses give us. If the senses give us only what is in our

heads, then science can in no way give us the “real” world. Seven hundred years before Eddington, Aquinas noted that if the first thing we know is our ideas, then science will concern only what appears in our minds; the scientific table will be no more real than the familiar table.¹ Berkeley is correct to this extent: we should be suspicious of any theory that explains away the familiar world of sensation, whether that theory be proposed by John Locke or by a renowned physicist.

What is the alternative to Locke’s mind in the box? We must deny his supposition that the first things we know are the ideas in our minds. We must affirm, instead, that our senses do, in fact, get us into touch with the world. The first things we know are not ideas in our heads; rather, the first things we know are objects in the world itself.

Long before Locke appeared on the scene, it seems, Thomas predicted the consequences of Locke’s starting point; he foresaw the conclusions of Berkeley and Hume.² Thomas asks whether the first thing we know is our ideas, that is, whether Locke is correct in his starting point. His question concerns intellectual knowledge rather than the senses, but we might well adapt his arguments to the senses. Aquinas argues that such a supposition leads to two absurd conclusions. First, our knowledge will only be of what is in our minds and will not concern any reality beyond our minds. Second, whatever seems to be will be true.

Berkeley thought that neither conclusion was absurd. Indeed, according to Berkeley the second conclusion is just common sense, the necessary presupposition to avoid skepticism. Aquinas’s argument is called a reduction to absurdity. You start with the position you wish to disprove and show that it logically leads to something absurd. You then conclude that the original

1. *ST*, I, q. 85, a. 2.

2. *Ibid.*

position must have been a bad starting point. Berkeley reaches the exact same conclusions as Aquinas—showing the logical implications of Locke’s position—but unlike Aquinas, he does not reject Locke’s starting point. Why? Because Berkeley thinks the conclusions are not absurd.

It is one thing to reject Locke’s starting point. It is another to provide a substitute. What substitute does Aquinas provide? How does he avoid the mind in the box view? Thomas considers two roles for the ideas in our minds.³ On the one hand, they might be the objects that we know. On the other hand, they might be that by which we know. When Brett cuts wood, the wood is the object upon which he acts, while the saw is that by which he acts. What role do our ideas play? Are they the objects upon which we act (when we know) or are they the instruments by which we know? Locke adopts the first position; Aquinas, the second. When Sarah sees a table, Locke supposes what she actually knows is not the table but her idea of the table. In contrast, Aquinas maintains that she actually knows the table first of all, and her idea is that by which she knows the table.

For both transient actions and immanent actions, the agent acts by way of some form. The fire heats by way of having the form of heat itself. Brett builds the chest by way of having some idea of the chest. Likewise, Sam feels the heat of the fire by way of some form, namely, by way of his idea, that is, by way of the nonphysical likeness that he takes on. What Sam knows is the heat in the fire. That by which he knows is the nonphysical heat in his mind.⁴

This teaching of Aquinas is united with another striking feature of immanent activities: the form by which the agent acts is one and the same with the activity itself. For transient activities, the form by which the agent acts is distinct from the action. The

3. *ST*, I, q. 85, a. 2.

4. *ST*, I, q. 56, a. 1; I, q. 85, a. 2.

heat in the fire is one thing; its activity of heating is another. Brett's idea of the chest is one thing; his activity of building is another. For immanent activities, the two are one and the same. The form by which Sam knows the heat is the nonphysical likeness in his mind; at the same time, this nonphysical likeness is the very same thing as his act of knowing. To take on a nonphysical likeness of heat is simply to be aware of heat. For Aquinas, then, "ideas" (Locke's term) are not the objects known; rather, they are that by which objects are known and they are the very act of knowing.

Locke differs from Aquinas, then, by multiplying acts of the mind. For Locke, the mind must first form a likeness, that is, form an idea, and then the mind must perform yet another action, namely, the act of knowing the idea that has been formed. For Aquinas, when the mind forms a likeness, it needs no additional act of knowing. To form the likeness is to know. To form a likeness of an object is not the first step in the process of knowing; it is the entire process.

Aquinas avoids the mind in the box view, then, by limiting the immanent action to one. We do not know the likenesses of things; rather, to take on the likeness of a thing is to know it. The object known, then, is not an idea; rather, the idea is that by which we know the reality. The first things we know are the objects in the world around us. Secondly, Aquinas maintains that we become aware of our very acts of knowing. Sam first of all knows the heat in the fire; secondarily, he is aware that he senses the fire.

DECEPTIVE SENSATIONS

Someone might object that Aquinas is naïve. Does he suppose that our senses never make mistakes? Is he unaware that the moon looks small although it is truly immense? Is he unaware that lukewarm water might feel scalding hot to Sam, who has

first placed his hand in a bucket of ice water? Is he unaware that someone wearing rose colored glasses sees white objects not as white but as rose? In short, is he unaware of the many instances in which our senses do not grasp reality as it truly is?

Aquinas was well aware that the senses can be deceptive. He asks whether the senses can have falsity, and he answers in the affirmative.⁵ His argument makes a distinction similar to Locke's distinction between primary and secondary qualities. Aquinas, however, is not concerned with qualities but with "likenesses." In our minds we form primary and secondary likenesses of the objects around us. He adds a third category of incidental likenesses. Thomas expects to find truth only for primary likenesses. For secondary and incidental likenesses, error abounds.

What becomes confusing is that Aquinas's distinction appears to be the exact opposite of Locke's. For Locke, primary qualities include extension, shape, and movement, while secondary qualities include color, heat, and sound. The reverse is true for Aquinas. For Locke, primary qualities can be sensed with more than one sense organ, as shape can be both seen and felt, while his secondary qualities can be sensed with only one sense organ, as color is perceived only by the sense of sight. For Aquinas, the reverse is true.

Perhaps the difference is only semantic. The two are making the exact same distinction but using opposite terminology. Perhaps, on the other hand, something more fundamental is at work. Locke is making a distinction in what he calls "qualities." Aquinas is making a distinction in what he calls "likenesses." In other words, Aquinas is not concerned with color in things, nor is he concerned with shape in things. Rather, he is concerned with the likeness of colors in our minds and the likeness of shape in our minds.

5. *ST*, I, q. 17, a. 2.

Table 3-1 Primary and secondary in Locke and Aquinas

	<i>Locke (qualities)</i>	<i>Aquinas (likenesses)</i>
Extension, shape, and movement	primary	secondary
Color, sound, temperature, and so on	secondary	primary
Sensed by multiple senses	primary	secondary
Sensed by only one sense	secondary	primary

This distinction is parallel to the distinction discussed earlier for transient actions, in which the agent makes the patient like itself. We noted, however, that the agent makes the patient like itself only for primary effects. Further effects that follow upon the primary effects need not be like the agent. The fire first of all heats the wax and makes the wax to be hot, like itself. Secondly, on account of the heat within it, the wax becomes soft; in this manner, the wax is unlike the fire.

Similarly, when Sarah sees the table, she takes on the likeness of the table in her mind. What she takes on first of all, however, is its color. Since color must be shaped, she also takes on some shape to the color.⁶ The likeness of shape, however, is only secondary, following upon the likeness of color. So it is with each sense organ. Each takes on the likeness of some quality. In taking on this primary likeness, it also might take on other secondary likenesses. By taking on the likeness of the sound of a car, the sense of hearing might also take on the car's position or movement, but these likenesses are secondary.

Just as secondary effects of transient actions need not be like the agent, so also secondary likenesses need not be like the orig-

6. *ST*, I, q. 78, a. 3, ad 2.

inal object.⁷ When Sarah takes on the color of the table in her mind, she also takes on some shape, but it need not be the actual shape of the table. The top of the table, for instance, might be rectangular, but Sarah, viewing it from an angle, perceives it as a parallelogram without right angles.

For this example, it might be helpful to distinguish between what is actually sensed and what is “perceived” by way of further mental powers that go beyond the senses. What Sarah actually senses is a nonrectangular parallelogram, but what she perceives is a rectangle. Her mind readily corrects for the distortion, because it is a regular pattern to which she has become accustomed. Similarly, if her field of vision includes a nearby puppy and a distant elephant, the likeness that she takes on for both might be of similar size, yet she readily perceives that the elephant is much larger than the puppy, because she knows that distant objects appear smaller than they are.

Aquinas, then, might be bemused by Descartes’s example of the moon that appears small. Of course it appears small, and of course the senses erroneously represent the reality. We should not be surprised. The size of the moon is a secondary likeness, which the senses typically distort. The distortion does not stump us, since the distortions of secondary likenesses follow regular patterns, for which we make rapid adjustments.

What Aquinas says concerning the reliability of primary and secondary likenesses is at odds with Locke, who says that the secondary likenesses (his primary qualities) are truly in the world outside our minds, while primary likenesses (his secondary qualities) are only in our minds. In contrast, Aquinas says that primary likenesses truly represent the world around us, while secondary likenesses typically distort the reality. Of course, Aquinas still thinks that some things in reality corre-

7. *ST*, I, q. 17, a. 2.

spond to the secondary likenesses; it is just that they do not correspond with accuracy. The table truly has a shape; it just does not have the same shape that appears in the sensation.

If a tree falls in the woods and no one is around to hear it, does it make a sound? This question addresses the reality of primary likenesses (or Locke's secondary qualities). On this point, Aquinas is clear. It is the primary likenesses that prove to be most reliable.⁸ Colors and sounds are the sorts of things that we should expect to be just as they appear to be. They are certainly not relegated to the mind alone.

ERROR IN THE PRIMARY LIKENESSES

Thomas acknowledges that error arises even for primary likenesses.⁹ He suggests two ways in which these errors might arise. First, the sense organ might be defective. Somebody who is sick, for instance, might taste sweet as if it were bitter, or somebody with jaundice might perceive white objects as yellow. Second, sometimes the quality sensed reaches the sense organ only by way of some medium and becomes distorted as it traverses the medium. The color of a swan, for instance, reaches the eye only by way of the intervening light rays. If the person is wearing rose-colored glasses, then these light rays become distorted before they reach the eye. What is actually white becomes rose by the time it reaches the sense organ. For this reason, the color of objects appears different depending upon light and shadow and similar environmental factors.

In both cases of error, the form received in the sense organ is distorted. In the first case, the distortion arises because the sense organ itself is not properly disposed to receive the form. In

8. *ST*, I, q. 17, a. 2.

9. *ST*, I, q. 17, a. 2.

the second case, the distortion arises because of the intervening medium. In either case, then, the error arises because of some failure of the prior transient activity, in which the object sensed acts upon the sense organ. Either the sense organ cannot properly receive this action, or the action itself distorts the form because it takes place by way of the medium.

Illusions often fall into this latter category. The “water” that appears on the road on a hot day, for instance, arises from distortions of refracted light rays. Indeed, the distortions that occur in secondary likenesses often arise in this manner as well. The shape of the table comes to the eye only by way of light rays, which distort the shape as they move out from the table at an angle.

The misperception of lukewarm water, on the other hand, seems to belong more to the first category of error, that is, errors that involve some defect in the sense organ. Sensing temperature, for Aquinas, is a special case. As we have seen, all sensation involves some prior transient action in which the object conveys the form to the sense organ, even as the fire warms Sam’s hand. Ideally, says Aquinas, the sense organ is “nude” of the form to be received. The follicles in the ear must not already be vibrating, in order that they can receive the vibration from outside. The proteins in the retina cannot be actively colored, in order that they can receive activation from the light rays.

For the case of temperature, however, this absence of the form to be received is impossible. Every physical object, the human body included, has some temperature. When the sense organ receives the temperature from some object, then, it receives it only in relation to the temperature that the body already possesses.¹⁰ If Sam has previously placed his hand in a bucket of ice water, then he will sense lukewarm water in relation to the current low temperature of his hand.

10. *In DA*, bk. 2, lect. 11, ¶23, ¶547.

Color blindness is sometimes supposed to be another instance of error in the primary likenesses. In reality, color blindness is not an error but a failure to distinguish. An animal that sees only shades of gray does not take on the likeness of color erroneously; rather, it takes on the likeness with fewer distinctions. The same holds for someone who is color-blind. No animal can take on every possible shade of coloration. Its limited ability to distinguish colors is not a falsification.

A similar failure to distinguish applies to Locke's example of the color of blood. It appears red to us, but when viewed under a microscope it is found to be partly red and partly transparent and partly other colors. A microscope allows us to view small objects at close range. Without a microscope, then, it is like we are viewing small objects at a distance, and when we view objects at a distance, we do not distinguish the boundaries of colors as clearly. A more prominent color may be all that we see, perhaps because it is brighter. We fail to distinguish other shades of color that are present, but this failure is not a falsification.

INCIDENTAL LIKENESS

Thomas, then, readily acknowledges errors in the senses. Secondary likenesses take on many distortions, and even primary likenesses can be distorted when the form is not properly received into the sense organ. We mentioned earlier that Thomas has a third category, besides primary and secondary likenesses. He speaks of incidental likenesses.¹¹

This third category is in fact no likeness at all. Rather, it is something linked to the likeness present within sensation (either primary or secondary). Descartes noted that when we sense wax, we know its color, shape, odor, and so on, but we do not sense the

11. *ST*, I, q. 17, a. 2.

substance of the wax itself. Aquinas would agree, at least to this extent: the senses take on the likeness only of properties, such as color or shape, and not the likeness of substance in itself. The substance, however, is linked to the properties, so we say that the person incidentally sees the wax.

Similarly, if Sam yells at Rachel, then Rachel does not directly sense his anger; rather, she senses it only incidentally. She takes on the sound of Sam's voice (and secondarily its position); she takes on the color of his face (and secondarily its shape). She senses the anger only incidentally, insofar as it is linked to these qualities that she does immediately sense. Using the distinction we made earlier, we could say that she senses sounds and colors while she perceives anger. In these cases, the object incidentally sensed is not known directly by way of the external senses, which know only sensible qualities. Other knowing powers beyond the external senses (to be discussed in future chapters) know these objects.

As with secondary likenesses, the senses often err with regard to what is sensed incidentally. Fool's gold, for instance, is mistakenly thought to be true gold. Earlier, we gave the example of a mistaken identification, when we see someone who looks like an old friend. Similarly, hydrogen peroxide or rubbing alcohol might easily be mistaken for water if we use only the sense of sight.

Aquinas, then, would not have been surprised by modern attempts to question the veracity of the senses. He himself recognized their tendency to distort reality. He defends their veracity only for primary likenesses, recognizing certain failures even for these. Nevertheless, the senses do bring us in contact with the reality beyond our minds. We do not first of all know some image within our heads. Rather, we first of all know qualities of objects in the world, such as color and sound, and we secondarily come to know other qualities—such as shape and magnitude—although in a distorted manner. In short, Aquinas insists upon sense realism.

Internal Senses

Thinking is different from perceiving and is held to be in part imagination, in part judgment.

Aristotle

We have begun by examining the senses because Thomas is a sense realist who believes that all of our knowledge begins with the senses. We can now step back and note an important feature of the senses that will apply to most of what we will discuss: the senses can be described as certain powers or capacities. We speak of the power of sight or of the capacity to hear. We can also use the word “potency,” a word that captures the fact that our senses can be in two distinct states: either potential or actual. If our eyes are closed or if we are in a completely dark room, then our power of sight is only in potential to see. When we open our eyes (or when the light is turned on), we actually see.

POTENTIALITY AND ACTUALITY

So it is with other powers. We are able to remember, but we do not always actually remember. We are able to imagine, but we do not always actually imagine. The distinction between poten-

tiality and actuality is so pervasive that it covers just about any category. If you are studying to be a doctor, then we can say that you are potentially a doctor; after you attain your degree, then you are actually a doctor. Cool water is potentially hot water; after sitting over the fire, it becomes actually hot. Wood is potentially a chest; after the constructive activity of a carpenter, it becomes actually a chest.

Potentiality indicates some ability; actuality indicates the realization of that ability. What is merely potential is able to be actual but is not yet actual. Actuality is more determinate than potentiality. When you are actually seeing, you are seeing something very determinate, such as a brown table. In contrast, the potential to see is open to many possibilities: you might see a brown table, a yellow fire, or a host of other objects. Potentiality implies a relation or directedness to actuality. The potential to remember, for instance, is directed to the act of remembering.

The distinction between potentiality and actuality is so fundamental that it is difficult to define. The mind picks up the distinction simply by considering particular instances. The distinction is fundamental in another manner as well. It is the foundation of most clear thinking. This distinction was the key used by the philosopher Aristotle to comprehend the world around us. When the distinction is abandoned, error and confusion typically follow.

For our purposes, the distinction between potentiality and actuality is fundamental for understanding the human person. Not only is it important to recognize that sensations are the activities of sense powers, which by themselves are in potential to act; also, it is important to recognize that by understanding the powers of a thing, we come to understand that thing itself. This point refers back to Descartes's distinction between a substance and its properties, a distinction first clarified by Aristotle. Both

the powers of a thing and its activities are properties. Rachel is a substance; her power to walk and her activity of walking are both properties that belong to her. Likewise, Sarah is a substance; both her ability to see and her act of seeing are properties or attributes.

In English, it may sound a little odd to speak of activities as “properties.” When we speak of “properties,” we tend to think of qualities such as color, shape, weight, texture, and so on. We do not typically think of activities. Neither are we apt to think of relations, such as Dan being the father of Sarah. The limitation of the word is no accident, for it is difficult to capture things as diverse as color, walking, and fatherhood with a single word. However diverse they might be, these “properties” share the idea of relating to a substance. All of these “properties” in some manner belong to a substance. They do not exist independently but derivatively. “Walking” belongs to Rachel, “brown” belongs to the table, and so on.

Substance is distinct from all the rest. While substance provides the foundation for the others (called properties), substance itself has a foundation in nothing else. The English word “thing” is very flexible, but it most aptly applies to substance. We do not typically say, when looking at the table, that there are many things: the color brown, the rectangular shape, a certain weight, and so on. Rather, we say that there is one thing, the table, with many properties or attributes.

A substance typically has multiple powers. The table, for instance, has the power to hold objects placed on top of it and the power to compress objects placed underneath the weight of its legs. Likewise, Rachel has the power to walk, the power to see, the power to remember, and so on. Each of these powers is an attribute that belongs to Rachel. When Rachel actually walks, actually sees, and actually remembers, these activities are also attributes belonging to Rachel.

OUR MANNER OF KNOWING SUBSTANCES

In this book, we are trying to understand human beings, such as Rachel. We will do so, however, only by understanding her properties. In particular, we will do so by understanding her powers. Rachel is distinct from a tree because she has many powers not found in a tree. With the tree (but not with the table), she shares the power to grow. On the other hand, she does not share with the tree the power to see or to remember, although she does share these powers with the cat and with the mouse. The better we understand Rachel's diverse powers, the better we will understand Rachel. Furthermore, we will understand her powers by observing her activities. We first discover that Rachel actually walks, from which we conclude that she has the power to walk. When we know that she has the power to walk, we then understand an important feature of her as a substance.

Our order of discovering what Rachel is like, then, begins with activity, moves to potentiality or powers, and ultimately reaches to her substance.¹ This order of knowing is distinct from the order of real causality. When we see someone stumbling about and talking in a slurred voice, we might conclude that he is drunk. Our order of knowing, then, moves from his activity to his internal state. His stumbling walk causes us to know that he is drunk. The order of causality, however, is the reverse.² His stumble does not cause him to be drunk; rather, his being drunk causes him to stumble.

Our knowledge begins with sensation, and the properties we sense are often the effects of unperceived causes. We sense the movement of the stumbling walk and we sense the sounds of the slurred voice. These properties of behavior have a deeper cause

1. *ST*, I, q. 77, a. 3.

2. *ST*, I, q. 77, a. 3, ad 1.

that we do not sense immediately. Rather, we reach conclusions concerning the cause from the properties that we do observe. Likewise, to know whether a certain substance is water, vinegar, or rubbing alcohol, we look to its properties. We observe its color, its odor, and its taste and reach a conclusion concerning the nature of the substance. Of course, a chemist would be more precise in the properties she chooses in identifying substances. The underlying substance is the cause of the properties, but we use the properties in order to come to know the underlying substance.

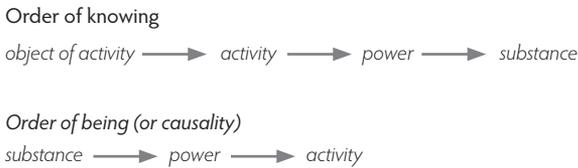
When it comes to the substance of a thing, the most important attributes are activities and the powers that underlie these activities. This point is especially evident for living things, but even the chemist is apt to consider the various activities—such as chemical reactions—that apply to a substance. The biologist will consider attributes such as shape and color, but typically these attributes are less important to him. In order to identify the organism, the most important attributes are its activities.

The principle that our knowledge begins with sensation will lead us to add a fourth element in the order of knowing, namely, the object of the action.³ We understand the act of heating insofar as we know that it is ordered to the end of heat. Likewise, we understand the act of walking insofar as we understand that it is ordered to moving about. We understand the act of seeing insofar as it is directed to the object of colors, which is distinct from the act of hearing, which is directed to the object of sounds. The full order of knowing, then, moves from (1) the object of the activity to (2) the activity itself to (3) the power for the activity to (4) the substance underlying the power.

Since we are trying to understand human beings, we will be concerned with observing the activities in which human beings engage. To understand these activities, we will seek to identify

3. *ST*, I, q. 77, a. 3.

Figure 4-1 The order of knowing and the order of being (or causality)



some proper object that separates one activity from another. We have already discussed the activity of sensation. We have distinguished the act of seeing from the act of hearing based upon the objects of color and sound. Likewise, the act of tasting is distinguished by its object, which is flavor. The sense of “touch” is actually a category of multiple senses, including the power to sense temperatures and the power to sense textures.⁴

We will be most of all concerned with activities of the mind. Besides sensation, we will examine memory, imagination, and the emotions; we will examine the power to reason and the power to will or choose. These latter two mental activities, with which our study will culminate, are most important for human beings. Sometimes beings with the rational power to understand are called persons, in order to set them apart from individual dogs, individual trees, or individual rocks. As rational beings we have what we are apt to call today “individuality,” that is, we do not move simply according to universal patterns of our nature. Rather, we move ourselves precisely as individuals. The individual of a rational nature, then, is distinctive. Each individual person has worth not merely as a representative of the species. Each has worth as someone who can move himself—precisely as an individual—to attain the good.

4. *ST*, I, q. 78, a. 3, ad 3.

Since human persons are most of all identified in terms of reason and will, we might suppose that the study of other powers, such as sensation, is irrelevant to our concerns. A complete understanding of human persons, however, must understand them as they are. They are not simply reasoning beings. They are animals that reason. We cannot understand human persons, then, unless we understand them as animals. Many mental powers are shared with animals. All animals have some sensation or other, although they may lack some particular sensation, such as the sense of sight. Most animals have other mental powers as well, such as the power to remember or the power to imagine. Furthermore, they have the power to desire by way of emotions. Those powers shared with the animals are less specific to the human person, but they are nevertheless essential.

Less specific yet are those powers shared with all living things. A human person, like a tree, grows and reproduces. A study that includes consideration of these activities provides a most complete understanding of the human person. We will, then, devote a little space to what might be called non-mental living powers, that is, those powers shared with plants.

NON-MENTAL LIVING POWERS

Aquinas identifies three powers shared by all living things: the power of growth, the power of maintenance, and the power of reproduction.⁵ Trees can grow from a tiny seed to a giant organism. The power to grow is not so dramatic in tiny single celled organisms, but it is found even there. When the single cell splits into two (realizing the power of reproduction), the two new organisms are too small to continue dividing. They must increase their size, which they do through the power of growth.

5. *ST*, I, q. 78, a. 2.

Like the power of growth, the power of maintenance uses food or nutrients, transforming the food into the organism. For the activity of maintenance, however, the food is not used to increase size. Rather, it is used to keep the organism alive, both by way of repairing damages and by way of providing energy for living activities. The power of reproduction makes a new organism of the same kind. Through its power of reproduction, for instance, a cat begets kittens; similarly, a flower forms seeds, thereby bringing about more flowers.

These three powers are found in all living organisms, whether plants or animals, but they are absent in inanimate matter, such as rocks, stars, and water. Of course, nonliving things do have some powers. Hot things have the power to heat, luminous bodies have the power to generate light, water has the power to dissolve certain things, and so on.

Someone might wonder whether the power of growth is limited to living things. After all, crystals grow. It would be more accurate, however, to say that crystals *form*. Most precisely, “to grow” implies that some being takes in material from the outside and transforms it into itself, thereby increasing its magnitude. Crystals do no such thing. Rather, when the conditions are right (such as during evaporation), certain regular bonds form between molecules, thereby forming crystals. This process has no terminus, that is, crystals do not stop “growing.” They increase in size as long as the conditions are right. In contrast, living things aim at a magnitude appropriate for reproduction, after which growth typically ceases.

One might also wonder whether viruses have the power to reproduce, since they appear to replicate themselves. Indeed, this ability of replication might leave the impression that viruses are themselves living. They do not exhibit, however, the other powers of living things, namely, growth and maintenance. Fur-

thermore, under scrutiny, the replication of viruses turns out not to be the same as reproduction. Viruses do not replicate themselves; rather, they *are replicated* by cells.

Common to all three of the “living” powers is an activity of the organism upon itself, but in different ways.⁶ The power of growth and the power of maintenance both act upon food, transforming the food into the organism. Secondly, then, the organism acts upon itself, for when it changes food into itself, it also modifies itself, either by increasing its size or by maintaining its state against corruptive forces.⁷ The power of reproduction also involves action upon the organism itself, but in a different way. For this power, the organism acts directly upon some part of itself, thereby transforming that part into a new instance of the organism.⁸ For growth and maintenance, then, the organism acts directly upon food and thereby acts upon itself; for reproduction, the organism acts directly upon itself and thereby acts upon its offspring. When a single-celled organism reproduces, for instance, it acts upon itself, dividing itself to create a new member of the species. More developed living organisms do not divide the whole of themselves, but divide off a portion of themselves—a sperm or an egg cell—which, when combined, can then become a new member of the species.

In the actions of these three powers, then, the agent changes itself. As we have seen, transient actions change some subject beyond the agent, while for immanent actions the agent itself changes. Consequently, someone might conclude that these three living activities are immanent actions rather than transient actions.

This conclusion, however, would be erroneous, as is evident

6. *In Meta*, bk. 7, lect. 8, ¶1442.

7. *ST*, I, q. 78, a. 2, ad 4.

8. *ST*, I, q. 78, a. 2, ad 2.

for three reasons. First, in these actions, the agent does change something beyond itself: it transforms food into itself, or it brings about a new organism. Second, insofar as these living activities bear upon the agent itself, they involve one part of the organism acting upon another part of the organism; the action, then, still goes beyond the part that plays the role of agent. In contrast, in immanent activities such as seeing, the power of sight does not change another part of the person; rather, the power of sight is itself changed through its own activity. Finally, immanent activity is identified most of all by its bearing upon an object that it does not change, even as the act of seeing the table does not change the table. In contrast, the acts of growth, maintenance, and reproduction do change the object toward which they are directed. They change food, and they change the organism itself.

Living things, then, differ most precisely from nonliving things insofar as they act upon themselves. Inanimate things may change other objects, but they do not act upon themselves.

FOUR INTERNAL SENSES

Besides the external senses, Aquinas identifies a set of four knowing powers called the “internal senses.” The terminology can be confusing, because in modern English we do not typically refer to these powers as “senses,” a word that we restrict to the five external senses. The four powers include memory and imagination, which we are not apt to describe as a kind of sense. Nevertheless, thinks Thomas, the word “sense” can be appropriately applied to these four powers because they share certain features with the external senses.

The four senses are called (1) common sense, (2) imagination, (3) the estimative power (or the cogitative power), and (4) memory, but these names provide little insight; indeed, they often mis-

lead. The common sense, for instance, has little to do with what we typically describe as common sense, and the memory and imagination will prove to be not exactly what we expect.

The imagination is probably most readily understood. Thomas says that the imagination is a power that retains what has been sensed with the five senses. Because Sarah has sensed a table, she can now imagine a table. She calls to mind what she has previously sensed. For this activity, we are more likely to apply the label “memory” rather than “imagination.” We think that imagination puts something original into the picture. If Sarah merely retains the image of the table, we call this memory. If she concocts a table made of gold, we call this imagination.

Aquinas does not deny the possibility of originality, but he does not require it. If Sarah concocts the image of a golden table, she is still retaining what she has sensed, for she has sensed tables before, and she has sensed the color gold. She is combining these sensations into an image not previously sensed, but nevertheless the image is derived from what has been retained from the senses. As such, it is imagination. But even if Sarah merely recalls the table precisely as she had seen it before, it is not memory; according to Aquinas, it is still imagination.

According to Aquinas, memory adds something beyond what has been previously sensed. It adds, for instance, the time at which it was sensed.⁹ Sarah does not have an external sense by which she perceives the aspect of past or present. Consequently, she cannot retain the perception of past or present, at least not with the imagination, which retains only what has been sensed. If she remembers that she saw the table yesterday, then her memory includes more than what she previously sensed. As such, it goes beyond imagination.

This feature of memory is best approached through the esti-

9. *ST*, I, q. 78, a. 4.

mative power, which corresponds roughly with what we call “instinct.” This power, as well, goes beyond what is known through the senses. With the estimative, or cogitative, power, we know things as useful or harmful.¹⁰ A bird, for instance, knows that twigs are useful for making a nest, it recognizes bugs as good to eat, and it perceives that cats are dangerous. What the bird knows through its external senses are certain sensible qualities, such as color, shape, odor, sounds, and so on. Nowhere among these sensible qualities do we find attributes such as “helpful” or “harmful.” When the bird perceives objects as helpful or harmful, then, it is going beyond its external senses. We might say that it is using its instincts. Of course, its knowledge still begins with the senses. It must first sense twigs before it becomes aware that they are useful. Nevertheless, the usefulness is not one of the attributes sensed.

The estimative power, Aquinas thinks, is not a retaining power. In that regard, it is like the senses. It knows what is now present. As the bird sees the bug now, it judges that the bug would be good to eat. Suppose the bird does not see a bug at the current moment. Nevertheless, it recalls bugs from the past, and it judges that it would be good to find some bugs. This judgment goes beyond the estimative power, which knows only as present. It also goes beyond the imagination, which knows only what is known by the senses and does not include usefulness or danger. What power, then, is the bird using when it thinks of something useful not now present? Ultimately, this judgment comes from the memory, which retains what is known by the estimative power.¹¹

By observing animal behavior, Thomas concludes that animals must have these three internal sense powers. Sheep naturally flee from wolves, and birds flee from cats. They must have

10. *ST*, I, q. 78, a. 4.

11. *ST*, I, q. 78, a. 4.

Table 4-1 The objects of three internal senses

<i>Object known is either:</i>	<i>Present</i>	<i>Retained</i>
What is sensed		imagination
Beyond what is sensed	estimative power	memory

some knowledge that goes beyond the mere sensible qualities of their enemies; they must have, then, a power to judge what is harmful and useful. Furthermore, birds seek bugs and cats seek mice even when the bugs and mice are not present. Consequently, birds and cats must have a power by which they retain knowledge of these objects even when the objects are not present. We might add that we observe animals learning from their experience. In a laboratory environment, for instance, they might learn to push a blue bar for water and a brown bar for food. They are retaining past experiences, together with the usefulness or harmfulness that came with these experiences.

The three powers, then, differ in two ways. First, these powers either know only what is known by the senses (imagination) or they know aspects beyond the senses, such as what is useful or harmful (estimative power and memory). Second, they know the object either as present (estimative power) or as retained (imagination and memory). The three powers, then, fit neatly into table 4-1.

You might correctly guess that the common sense fits into the empty box. It knows what is known by the five senses, and it knows it as present. As such, the common sense seems rather redundant. After all, do not the five senses themselves know what is known by the five senses, and do they not know the object as present? Yes, they do. But they do not know them as “common.”

Before we examine what is meant by the common sense, we

should make a caveat concerning the manner in which we have been speaking. We have said that the imagination retains what is known by the five senses. We have said that the estimative power knows aspects beyond the five senses. And so on. This manner of speaking, although convenient, is ultimately rather sloppy, because most precisely it is the bird itself that knows, not its powers.¹² The bird knows *by way of* its powers. When we say that the estimative power knows aspects beyond the five senses, then, we should more accurately say that the bird knows aspects beyond its five senses by way of its estimative power. Nevertheless, such accuracy can be rather cumbersome. For the sake of convenience, we will speak of the powers themselves knowing, but it should always be understood that the animal itself knows, and it knows by way of its powers.

Let us return to the common sense, which does not refer to the ability to recognize and manage everyday affairs, as the word is typically used in modern English. Rather, it refers to the ability to know the sense qualities *as common*. In what way is it different from the five external senses? For one thing, the common sense knows what is sensed by all the senses. The power of sight knows colors, the power of hearing knows sounds, and the power of smell knows odors. In contrast, the common sense knows colors, sounds, odors, flavors, textures, temperatures, and everything else attained by the five external senses. As such, the common sense gives us a unified sense experience. Without it, our awareness of sounds would be completely distinct from our awareness of colors. As it is, we experience colors and sounds together. Indeed, we can recognize that a certain sound comes from a certain colored object. When Robin sees a drum and hears a drum, she is sensibly aware that the sound arises from what she sees.

The common sense, then, allows us to put together multiple

12. *ST*, II-II, q. 58, a. 2.

Table 4-2 The four internal senses

<i>Object known is either:</i>	<i>Present</i>	<i>Retained</i>
What is sensed	common sense	imagination
Beyond what is sensed	estimative power	memory

sense experiences into a single sense experience. It also allows us to separate senses. We immediately recognize, at the sense level, that sounds are different from colors. This recognition cannot come from the sense of sight, which knows only colors; nor can it come from the sense of hearing, which knows only sounds. Only the common sense, which knows both sounds and colors, can distinguish between the two.¹³

The common sense might also account for what contemporary psychologists sometimes call an “internal sense,” which is our awareness of our current bodily state, both its positioning and its various internal dispositions. With the common sense, says Aquinas, we are aware that we are sensing. The external senses know the world around us. Likewise, the common sense knows the world around us, but it also knows our own acts of sensing, and thereby it knows the body by which we sense.

The four internal senses, then, include two powers that know what is present and two that retain; they include two powers that know what is known by the five senses and two powers that go beyond the five senses. The complete chart can be seen in table 4-2.

Thomas says that we distinguish an activity and its corresponding power through its object.¹⁴ The common sense and

13. *ST*, I, q. 78, a. 4, ad 2.

14. *ST*, I, q. 77, a. 3.

imagination have for their object the sensible qualities in general. The estimative power and the memory have for their object what is useful or harmful. Each case demands further precision. The common sense has for its object not simply sensible qualities but sensible qualities as present. The imagination has for its object the same sensible qualities but as absent. The object of the estimative power is the harmful and useful as present, and the object of the memory is the harmful and useful as absent.

The phrase “harmful and useful” is a simplified way of referring to a host of aspects that can be perceived by these two powers. Some of these features do not fit neatly under the description “harmful and useful.” We have already indicated that memory also knows objects as being in the past, which isn’t exactly harmful, nor is it exactly useful. These two powers may well be able to grasp other objects that do not fit perfectly within the notion of “harmful and useful.” What marks these powers, more than anything, is the ability to perceive features or aspects of things that go beyond the external senses.

WHY THE LABEL “INTERNAL SENSES”?

We might well wonder why all of these powers are called “senses,” and we might further wonder why they are “internal.” They are “senses” because they all grasp a concrete, material reality. Both of these features—that the object grasped is concrete and is material—will become clearer later when we discuss reason, which is not a sense power precisely because its object need not be concrete and need not be material. For the present, it suffices to note that the material aspects of the object known are pretty clear. Furthermore, that the object is a concrete singular instance is clear at least for the common sense and for the estimative power. The bird does not know that twigs in general are

useful. Rather, it perceives this individual twig and recognizes it as useful.

The memory and imagination are less clearly bound by the concrete, since the object need not be present. Sarah might call to mind the image of a table without tying it down to any particular table. In what way, then, is she knowing something concrete? The answer to this question will become clear only after we discuss reason and its object. Part of the confusion arises because our experience involves imagination working together with reason; it can be difficult for us to sort out what belongs to imagination and what belongs to reason.

All four of the internal senses are called “internal” because they receive their object not from the world around us but from some power of the mind.¹⁵ As we have seen, the external senses arise from the object’s acting upon the sense organs, even as the fire acts upon Sam’s hand. In contrast, the object known by the act of common sense arises from the instigation of the external senses. In both cases—for the external senses and for the common sense—the object might be the same. A sheep might know the color, sound, and odor of a wolf. It knows these attributes individually with the external senses, but it knows them as united with the common sense. For the external senses, the awareness is instigated by the attributes themselves, as they act on the sense organs of the sheep. In contrast, for the common sense, the awareness of the same attributes derives not from physical contact with the real wolf; rather, it arises from the form that has come to be in the external senses.

The common sense subsequently provides the object for the imagination. The point is less clear for the estimative power. Clearly, however, the “useful” and the “harmful” do not act directly upon the sense organ. Rather, the common sense presents

15. *SCG*, bk. 4, c. 11, ¶4.

the object of a unified sense experience, and from this object the estimative power instinctively pulls out what is useful or harmful. Finally, the memory, which retains what has been known through the estimative power, does not arise immediately from the external object; rather, it arises by way of the estimative power.

REASON INTERACTING WITH THE INTERNAL SENSES

As mentioned above, the reason and imagination often work in tandem. The same can be said of the internal senses in general.¹⁶ Reason has a special relationship with the estimative power. Indeed, for human beings, Aquinas gives a new name to this power, calling it the cogitative power rather than the estimative power.¹⁷ If the power of estimation is instinct, then Aquinas is saying that for human beings the word “instinct” is not appropriate. Although we have some limited instinctive judgments, ultimately we pass judgment upon the usefulness or harmfulness of objects by way of our reason. Reasoning provides deeper insight than does the power of estimation. With our reason we can understand the true causal relations between a means and an end, and we can recognize the importance of various goals.

These judgments of reason, however, do not happen independent of the internal senses. If we are to recognize that a particular bucket would be good for carrying water, then we must have sense knowledge of the bucket. Furthermore, we must recognize the importance of certain shapes, the imperviousness of certain materials, and so on, which means that we are retaining information about these sensible attributes. Strictly speaking, then, the cogitative power is not a single power. It is the interaction of

16. *ST*, 1, q. 78, a. 4.

17. *ST*, I, q. 78, a. 4, ad 5.

at least two powers, that is, of reason and of estimation. Realistically, it is the interaction of reason with the imagination, with the estimative power, and with memory.

Just as the judgments of the cogitative power go beyond what the estimative power could provide without reason, so also we find the imagination and the memory extending beyond what these powers have in nonreasoning animals. Human beings have what we call a “creative imagination,” which means that we can put things together in new ways. Animals simply retain past experiences. With regard to memory, human beings are able to reminisce or search through their memories. While animals have what might be called sudden recall, human beings can try to remember what happened at a certain point in their lives. When looking for her keys, for instance, Joyce might try to recall the last time she had them. In contrast, animals are confronted with various sensible realities, which then trigger certain memories. Of course, such triggered memories happen to human beings as well. The point is simply that we can also ransack our memories.

For human beings, then, reason elevates imagination, estimation, and memory to a higher level not found in animals. Although these powers are shared with animals, they take on unique features in human beings.

The Emotions

The part of man with which he loves and hungers and thirsts and feels the flutterings of any other desire, may be termed the irrational or appetitive, the ally of various satisfactions.

Plato

The external senses and the internal senses are both what we might call knowing powers. Through them, we are aware of various realities. This chapter will address another set of mental powers, which we will call desiring powers. They are not knowing powers, for they do not grasp features of the world around us. Rather, they respond to the world around us and move out to change it. We all experience fear and anger, desire and aversion. These emotions are not kinds of knowledge. Fear, for instance, is not an awareness of danger; rather, it is a response to danger. Fear propels us to action; it moves us to change the world.

INCLINATIONS

We can better understand these desires by placing them within a larger category, which we will call “inclinations.” When we discussed transient actions, we saw that every agent acts by way

of some form. We can now add that a form by itself is insufficient. The form must be joined to movement, or impetus. The emblem on a metal seal, for instance, does not act unless a person presses it into the wax. Only with this movement can we say that the form of the seal (its shape) acts to make the patient (the wax) like itself. The movement to act is what we are calling “inclination.”

Often the movement to act comes from some outside source, even as the movement of the seal comes from the person who uses it. Likewise, the movement of an arrow to the target comes from the archer, and the movement of a pen to write comes from the one who writes. These movements from an external source are called “inclinations” only in a very weak and extended sense of the word. More properly, an inclination is a movement that is inherent to a thing. A tree has an inclination to put out roots and to grow. Even an inanimate object such as a ball has an inclination to move downward, although our recognition of this inclination can be obscured by misconceptions of gravity as a kind of external force pulling the ball down. Most properly, then, an inclination is an inherent movement to some end.

Inclinations may be divided into two kinds: those that are nonconscious and those that are conscious.¹ The inclinations of a tree, mentioned above, are nonconscious, as is the ball’s inclination to move down. In contrast, the fear that propels us to flee is conscious, for it arises from an awareness of some danger.

A nonconscious inclination, says Thomas, follows upon some “physical” (or natural) form, while a conscious inclination follows upon the nonphysical form of knowledge, which we examined when we discussed sensation. Following upon its mass, for instance, the ball has an inclination to move down. Likewise, a hot object has an inclination to pass on its heat, and a photon has an inclination to move at the speed of light. By contrast, Kenny

1. *ST*, I, q. 80, a. 1; I-II, q. 26, a. 1.

desires chocolate only because he is first of all aware of chocolate. His awareness might be fairly minimal. Perhaps he knows only that chocolate is a food recommended by his friend Christine. At least some such limited awareness, however, is necessary before Kenny can desire the chocolate.

It would be a mistake to suppose that conscious inclinations are found in animals and human beings, while nonconscious inclinations are relegated to plants and inanimate objects. Certainly, these latter cannot have conscious inclinations, since they have no awareness. The mistake is to suppose that nonconscious inclinations are absent in animals and human beings. Our own conscious inclinations are so evident to us that we can easily lose sight of the fact that we have a multitude of nonconscious inclinations as well.

When Barb accidentally cuts herself, for instance, her body immediately begins a process of healing. This process does not depend upon any awareness of the situation. If Barb were in a coma, her body would react the same way. She has, then, a nonconscious inclination to heal wounds. Likewise, her body has an inclination to grow and to maintain itself in other ways. Her power of reproduction indicates an inclination to pass on a new life. This inclination, of course, is typically carried out through conscious activity. The tendency of conscious and nonconscious inclinations to act in unison is not peculiar to the inclination to reproduce. When an individual is outside the womb, for instance, the inclination to grow is typically realized only in unison with the conscious inclination to eat food. Clearly, however, the activity of growth takes place quite apart from some conscious desire to grow.

EMOTIONS AND WILL

Conscious inclinations are themselves divided into two major categories, namely, the emotions and the will.² The distinction rests fundamentally upon the kind of knowledge that gives rise to the inclination. Every conscious inclination arises from some knowledge, but sometimes that knowledge is sense knowledge (external or internal) and sometimes it is what we will call intellectual knowledge, or the knowledge of reason.³ The conscious inclinations of emotions follow upon sense knowledge. The conscious inclinations of the will follow upon intellectual knowledge.

The difference between these two will become clear only later, when we discuss the will in more detail. At present, we will focus on one prominent difference (beyond the essential difference of the kind of knowledge from which each arises). The emotions, with which we are all familiar, always involve some bodily change of which we become sensibly aware. When Clare is afraid, for instance, her heart beats faster, her muscles tense, and she may begin to sweat. Similar changes might occur when somebody becomes angry. Likewise, when Kenny is embarrassed, blood rushes to the surface of his skin, making him feel warm and turn red.

These changes occur in part because the body is preparing for action. Ultimately, however, Aquinas claims that these bodily changes are part of what it means to have an emotion.⁴ Emotions are not merely mental; they are partly bodily. The emotion of fear is not simply an awareness of danger and the mental desire to avoid it; essential to the fear is the rapid beating of the heart and the tensing of the muscles. Not only are these bodily changes part of the emotion; in addition, we are sensibly aware of

2. *ST*, I, q. 80, a. 2; I-II, q. 26, a. 1.

3. *ST*, I-II, q. 26, a. 1; I-II, q. 27, a. 2.

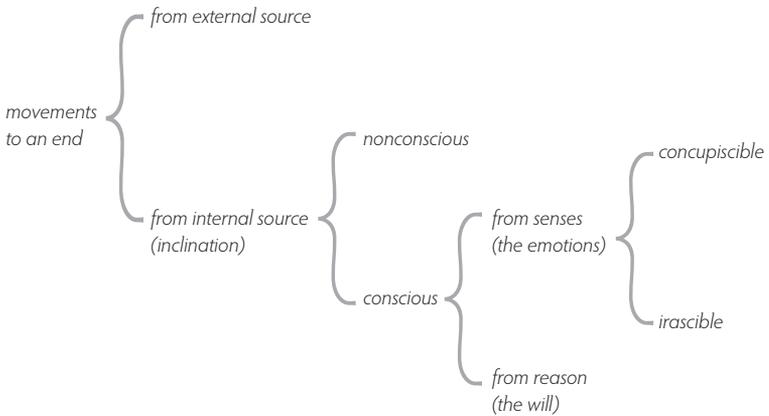
4. *ST*, I-II, q. 22, a. 2, ad 3; I-II, q. 17, a. 7.

these changes taking place within us. Emotions, then, have two elements connected to consciousness. On the one hand, some awareness of something good or bad provides the form from which the inclination arises, even as Clare's awareness of danger gives rise to her fear. On the other hand, we are conscious (at a sensible level) of the physical element of the emotion, even as Clare feels the tension in her muscles. Because of the latter awareness, we sometimes call emotions "feelings."

Thomas, then, avoids the error of supposing that emotions are simply a mental event with no bodily component. Sometimes, contemporary thinkers fall into the opposite error. They suppose that an emotion is simply a conjunction of bodily changes. They lose sight of the conscious element. This element, thinks Aquinas, is the most essential. An emotion is an inclination directed to some endpoint, and this endpoint comes only from conscious awareness. The emotion of fear, for instance, concerns some danger. A list of bodily changes, such as a rapid beating of the heart, tense muscles, and so on, does not capture the essence of fear; indeed, many of the same bodily changes occur in diverse emotions. Fear becomes the emotion of fear only insofar as the person is aware of some danger, from which he is then inclined to flee. If Clare's heart is beating rapidly and if her muscles are tense, it does not follow that she is afraid. She is afraid only if she has, in addition, some (perhaps confused) awareness of danger, together with the impulse to flee.

Sometimes, our knowledge of the danger is rather vague. We are agitated about something, for instance, but we cannot put our finger on its precise nature. This phenomenon arises because we might make a judgment of danger with our power of estimation, but we have not clearly spelled out the danger with our reason. Reason and estimation have failed to unite into the cogitative power. With practice—often recommended in psychological

Figure 5-1 Inclinations



treatment—we can become more aware of our habitual thoughts that give rise to various emotions.

Aquinas divides the emotions into two major categories, traditionally called the “concupiscible” emotions—which include emotions such as love, hate, desire, and enjoyment—and the “irascible” emotions—which include emotions such as anger, fear, despair, and daring.⁵ The labels, although inadequate, are perhaps the best we can get. As we should expect (given our previous analysis of actions), the two kinds of emotions are distinguished by having distinct objects. All emotions concern some good or bad thing, but the irascible emotions add a certain level of challenge or difficulty. Consequently, Aquinas says that the concupiscible emotions have for their object what is simply good or bad, while the irascible emotions have for their object some difficult good or difficult bad thing. The complete division of inclinations can be seen in figure 5-1.

5. *ST*, I, q. 81, a. 2.

CONCUPISCIBLE EMOTIONS

The distinction between the concupiscible and irascible emotions is best clarified by considering the emotions in further detail. Thomas identifies six different concupiscible emotions and five different irascible emotions. The concupiscible emotions are first divided into those that concern something good and those that concern something bad.⁶ These two are further divided into three each, giving the total of six. The threefold division depends upon the idea that emotions are a kind of movement, and movement, says Aquinas, has three states. Movement begins with impulse, it matures into the movement itself, and it is fulfilled in rest. Consider the simple example of the ball that Louis holds in his hand. As we have seen, this ball has an impulse to move down. When Louis lets go of the ball, then it actually moves. Finally, when it reaches the ground, it comes to a stop or a resting state. The same three states are found in the emotions: impulse, movement, and rest.

The division is clearest for the concupiscible emotions concerning the good, which are love, desire, and pleasure (or enjoyment). Love is a certain impulse toward a good thing.⁷ We are using the word “love”—as it typically is used—very generically. We are not restricting it to some kind of noble love for one’s fellow human beings. Rachel may indeed love her brother Sam, but she also loves ice cream. Although the two are quite different, the same word is used for both because they share an essential feature: both are impulses to a good.

The two emotions of desire and enjoyment follow upon love.⁸ When we love something but do not yet possess it, then we desire

6. *ST*, I-II, q. 25, a. 2.

7. *ST*, I-II, q. 26, a. 1.

8. *ST*, I-II, q. 30, a. 2.

it, which is a kind of movement out to attain the good. Rachel loves ice cream, for instance, and she recognizes that she is not now tasting it, so she wants to have it. When we love something and we come to possess it, then we rest in it, which is the emotion of pleasure or enjoyment. When Rachel begins to eat her ice cream, for instance, she enjoys it.

The same three stages can be found when the object is something bad. The impulse in response to something bad is hate, the movement is aversion, and the “rest” is displeasure or pain.⁹ When faced with something bad, we begin with the impulse of hate. Traci, for instance, hates Brussels sprouts. We then move to aversion. When presented with Brussels sprouts, Traci has an aversion toward them. Finally, we have displeasure or pain when in the presence of what we perceive as bad for us. If Traci is forced to eat Brussels sprouts—so that she has the unavoidable presence of a bad-tasting thing—then she has displeasure or even pain.

The “emotions” of pleasure and pain indicate an inadequacy of the word “emotion.” Aquinas uses the Latin word *passio*, which might be translated as “passion,” an English word that typically refers to a very strong emotion. But Aquinas is speaking not only of strong emotions, so the word “passion” is misleading. Aquinas’s word *passio* captures the passive quality of our conscious sense inclinations, rather than their strength. Passions are, says Thomas, something we undergo.¹⁰ Both the pain of a broken arm and the sorrow over a lost loved one are affective reactions that happen to us.

The word “emotion” is also inadequate. Its inadequacy is most evident when describing pleasures and pains. The word “emotion” is not typically applied to sensible pain, which Aquinas

9. *ST*, I-II, q. 29, a. 1; I-II, q. 35, a. 3.

10. *ST*, I-II, q. 22, a. 1.

Table 5-1 The concupiscible emotions

<i>Object</i>	<i>Impulse</i>	<i>Movement</i>	<i>Rest</i>
A simple good thing	love or liking	desire	enjoyment or pleasure
A simple bad thing	hate or dislike	aversion	sorrow, pain, or displeasure

nas calls external pain, such as the pain of a broken arm. On the other hand, the word “emotion” is applied to what Aquinas calls interior pain, or sorrow, such as the sadness we feel upon the death of a loved one. As far as Thomas is concerned, they are both conscious inclinations, but the first begins with some change in the body (such as a broken arm) of which we are aware, while the latter begins with some awareness (such as the awareness of the death of the loved one), which is then tied to a bodily change (such as tears).¹¹ The same distinction applies to pleasures. When eating ice cream, we have a bodily kind of pleasure, which is not best described as an “emotion,” but when enjoying a sunset we have a pleasure more from a mental state. The six kinds of concupiscible emotions (or *passiones*) are summarized in table 5-1.

IRASCIBLE EMOTIONS

We are now prepared to understand irascible emotions, which involve some kind of difficulty. Suppose Sam places meat before his dog Abby. She has the emotion of love, then desire, which leads her to eat the meat, and then she enjoys the meat. But now suppose that Sam deposits the meat on one end of the yard, while Abby is at the other end. Between the meat and Abby is a fire. Abby is repelled by the fire but attracted by the meat.

11. *ST*, I-II, q. 35, a. 7.

The tension between these two movements cannot be resolved at the level of concupiscible emotions, which deal only with matters of straightforward attraction or straightforward repulsion. To handle this more complex object, which includes aspects of both attraction and repulsion, we need the irascible emotions.¹²

Toward this difficult good, Abby can have two movements. She can move toward it, which is the emotion of hope, or she can move away, which is the emotion of despair. When a good includes some difficulty, then we move toward it not with simple desire but with hope, or we move away from it, with the emotion of despair.¹³ In both cases, achieving the good is not so simple. Besides getting the good, something must be overcome. With hope, we think it is possible to overcome the difficulty and achieve the good; with despair, we think the difficulty is too great and we do not want to face it.

A difficult bad thing, which might also be called a danger, is a little more complicated. We want to get away from bad things. Adding a difficulty means that it is not so easy to avoid the bad thing. In some manner, the bad thing is heading toward us on its own; it is coming out to get us. If Traci does not like Brussels sprouts (or “hates” them), then she has aversion toward them. It is easy enough, however, to avoid Brussels sprouts. Suppose, however, that Traci thinks her mother will make her eat Brussels sprouts. In some manner, the Brussels sprouts are coming out to get her (or her mom is coming to get her with Brussels sprouts). It is no longer so easy to avoid eating the Brussels sprouts. The simple concupiscible emotion of aversion no longer suffices. Now Traci *fears* that she will have to eat Brussels sprouts.

Regarding a difficult good, we have two movements, either toward it, with hope, or away from it, with despair. Likewise,

12. *ST*, I-II, q. 23, a. 1.

13. *ST*, I-II, q. 40, a. 1; I-II, q. 40, a. 4.

Table 5-2 Partial list of irascible emotions

<i>Object</i>	<i>Impulse</i>	<i>Movement</i>		<i>Rest</i>
A difficult good thing	not applicable	move toward move away	hope despair	not applicable
A difficult bad thing	not applicable	move toward move away	daring or bravery fear	

regarding a difficult bad thing we can either move away from it, which is fear, but we can also go out to meet it, which is daring or bravery.¹⁴ For a simple bad thing, there is no point in going out to meet it, because it can be easily avoided. If the bad thing is coming out to get us, however, then we can choose to confront it, stopping it before it reaches us. Traci, then, might have fear and try to avoid dinner, where she will be forced to eat the Brussels sprouts, or she might have daring and confront her mother, arguing that she should not have to eat Brussels sprouts.

If Rachel is afraid of speaking in public, then she thinks that some bad thing is coming out to get her, probably shame or humiliation. The emotion of fear moves her to avoid public speaking, fleeing from the difficult bad thing. Rachel need not respond to this danger with fear, however. She might confront the difficult bad thing. While the emotion of fear propels Rachel to flee the difficult bad thing, the emotion of daring propels her to confront it, so that she can stop the humiliation by doing a good job of speaking in public.

The four irascible emotions discussed above are portrayed in table 5-2. All of the emotions discussed so far are in the column concerning movement. The irascible emotions have nothing in the place of impulse (for which we found love and hate in the concupiscible emotions), and they have nothing in the place of

14. *ST*, I-II, q. 41, a. 2; I-II, q. 45, a. 1.

rest for a difficult good. These absences will be explained shortly. You might guess that the empty space (for the presence of a difficult bad thing) will be filled with the emotion of anger, for which the irascible emotions are named.

THE IRASCIBLE EMOTIONS BEGIN AND END
WITH THE CONCUPISCIBLE

Before we examine anger, which is a complicated emotion, we should explain why there is no emotion in the three spaces indicated. The absence of rest in a difficult good is easiest to understand. If the individual indeed attains the good, then he has overcome the difficulty. The good has ceased being a difficult good and has become a simple good. When we achieve a simple good, however, we have the emotion of pleasure or enjoyment, which is a concupiscible emotion. There is no need, then, for a special irascible emotion having to do with rest. If Abby gets past the fire and begins eating the meat, then she has the emotion of enjoyment, for the good no longer poses any difficulty.

A similar account could be given if Abby despairs of getting past the fire. She is left with the concupiscible emotion of sorrow, for the loss of a good is considered a bad thing. Abby has lost the good of eating meat. She has given up on it—going so far as to avoid it—because of the difficulty associated with it. Now that the difficulty has been avoided, she can sorrow in the loss of the simple good of eating meat.

The impulse underlying the irascible emotions arises from love toward some simple good or hatred toward the difficulty. Abby has an impulse toward the meat—despite the fire—because eating meat is in itself good. She has an impulse away from the fire (supposing the fire is not perceived as coming out to get her), because the fire is a bad thing that she can easily avoid. Given

these tensions at the level of impulse, the irascible emotions come into play at the level of movement. Likewise, toward the bad thing of humiliation, Rachel has the impulse of hatred. Toward the elimination of this bad thing, Rachel has the impulse of love, for the elimination of a bad thing is perceived as good.

As mentioned above, the empty space (the presence of a difficult bad thing) can be filled with a concupiscible emotion. If Rachel is indeed humiliated, for instance, then she has the emotion of sorrow or pain. The bad thing is no longer coming out to get her; rather, it has successfully got her, so that the difficult bad thing has become a simple bad thing, which gives the emotion of sorrow. If Rachel gives a successful speech, then the humiliation is averted. The elimination of this bad thing is a good in which Rachel takes pleasure.

Aquinas says that the irascible emotions begin in the concupiscible emotions and they are resolved into the concupiscible emotions.¹⁵ The impulse always comes from concupiscence, and the rest (or the unavoidable presence) is also in concupiscence. Irascible emotions come in between impulse and rest, at the level of movement.

ANGER

We did say, however, that the emotion of anger fits in the place of having a difficult bad thing unavoidably present. At the same time, we said that if a bad thing is present, that is, the person is stuck with the bad thing, then the difficulty has passed (it is no longer coming to get you but has succeeded), and we have the emotion of sorrow. Which is true? Do we have the concupiscible emotion of sorrow or the irascible emotion of anger? In fact, both can be true.

15. *ST*, I-II, q. 23, a. 1.

This twofold possibility arises because the difficult bad thing is itself often twofold. On the one hand, there is the bad thing you wish to avoid; on the other hand, there is the someone or something that is moving to give you the bad thing. On the one hand, Traci does not like eating Brussels sprouts; on the other hand, her mother is forcing her to eat Brussels sprouts. The difficult bad thing, then, includes both the eating of Brussels sprouts and her mother. When Traci eats the Brussels sprouts, she has sorrow over the bitter flavor; toward her mother, she has anger. Likewise, Rachel does not want shame, but she perceives the audience as coming to give it to her. When she is humiliated, she has sorrow, but toward someone who laughs at her, she has anger. To complicate matters, she might have anger toward herself, which means she perceives her own inadequacies as coming to get her.

The complex object of a difficult bad thing, then, gives rise to sorrow and sometimes to anger as well. When the bad thing is present to you, then you will have sorrow, but you might also have anger toward the one who gave you the bad thing. Sorrow always precedes anger, says Aquinas, for the bad thing must first be present before we can aim to strike out at the one who gave it to us.¹⁶

Anger does indeed seek to strike out. Something bad has been done to me, and I will do bad in return. What I do in return, however, I do not perceive simply as something bad. I perceive it as good, because the person deserves it. It is fitting that he should have evil returned for evil, and what is fitting is in some manner good for me.

In the strict sense, then, Aquinas thinks that only human beings can have anger, for only human beings perceive justice and the idea of guilt or the deserving of punishment. Strictly speak-

16. *ST*, I-II, q. 46, a. 3, ad 3.

ing, as well, we have anger only toward human beings, for only those who voluntarily choose to bring about evil deserve to have it returned.¹⁷ Deb does not get angry at a hailstorm for damaging her car (although she might get angry at herself for leaving her car out). She does get angry at vandals who damage her car. We do, however, get angry at inanimate things like computers, although then we might in part be angry at the people who made them.¹⁸ Experience with animals reveals, as well, that certain animals have something like anger. Thomas acknowledges the point, but he does not think that animals have anger in the strict sense, nor, it seems, would our frustration with the computer be anger in the strict sense.¹⁹

VARIETIES OF EMOTIONS

The complete list of emotions, then, can be found in table 5-3. With the exception of anger (in the strict sense), all of these emotions are found in at least some animals. All animals have the concupiscible emotions, and most animals have the irascible emotions as well, although perhaps some rudimentary animals, such as worms, do not have the irascible emotions.

These emotions can be further divided (in both humans and animals), depending upon the object. Desire for sexual pleasure is one thing, desire for the pleasures of food is another, and desire for possessions is yet another. Sorrow over losing a game is one thing, sorrow over the good of the victor (envy) is another, and sorrow over the death of a friend is yet another.

Sometimes the exact placement of a given emotion within the chart poses an interesting question. Where, for instance, are

17. *ST*, I-II, q. 46, a. 4; I-II, q. 46, a. 7.

18. *ST*, I-II, q. 46, a. 7, ad 1.

19. *ST*, I-II, q. 46, a. 4, ad 2; I-II, q. 46, a. 7, ad 1.

Table 5-3 Complete list of emotions

	<i>Object</i>	<i>Impulse</i>	<i>Movement</i>		<i>Rest</i>
Concupiscible emotions	a simple good thing	love	toward	desire	enjoyment
	a simple bad thing	hate	away	aversion	sorrow
Irascible emotions	a difficult good thing	not applicable	toward	hope	not applicable
	a difficult bad thing	not applicable	away	despair	
			toward	daring	anger
			away	fear	

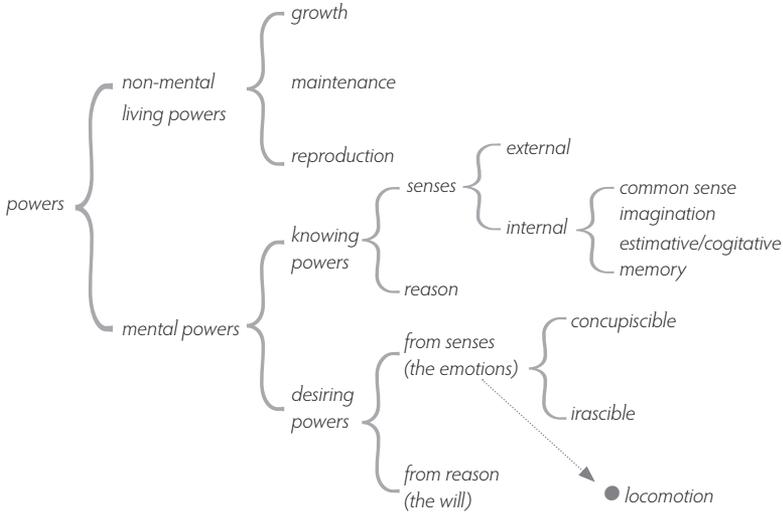
we to place the emotion of anxiety? We might plausibly place it in the irascible emotions as a certain kind of fear. Aquinas, however, places it as a certain kind of sorrow.²⁰ It is a sorrow that we think we cannot get rid of. We would like to throw it off, but we believe that we cannot. Thomas himself spends much time and effort analyzing the emotions in detail. Understanding the emotions, he thinks, is crucial for learning to form and shape our emotions. The same conclusion, it seems, has been reached by modern psychology. The healing of an emotional disorder usually involves becoming aware of the precise nature of the emotions underlying it, as well as developing an awareness of what situations trigger the emotions.

LOCOMOTION

We are beginning to get a better understanding of human beings. We now know that they have certain powers shared with all living things, namely, growth, maintenance, and reproduction. We also know that they have external senses, which they share with animals and by which they grasp the world around them. They also have internal senses, by which they retain what has been sensed, and by which they become aware of certain nonsen-

20. *ST*, I-II, q. 35, a. 8.

Figure 5-2 Powers of the soul



sible aspects of reality, such as what is useful or harmful. Finally, they have conscious inclinations called emotions, by which they consciously move out to the world and enjoy the world. If we add the two powers that we have yet to consider—reason and will—then we can provide the division shown in figure 5-2.

The reader will notice the mention of one power not yet discussed, namely, the power of locomotion or the power to move about. This power is not easily classified. Strictly speaking, it is not a mental power, since it is neither a kind of awareness nor a kind of desire. Nevertheless, it cannot be classified among the non-mental powers. For one thing, it is not shared with the plants. For another, it is intimately connected with knowledge, and most especially with emotional desire.

The power of locomotion is simply the power of animals to

move about in order to satisfy their various conscious desires.²¹ Almost all animals have at least some rudimentary form of locomotion. When Abby the dog is aware of the meat, she then desires the meat, and after desiring the meat, she moves to get it. The ability to move about is often crucial in the very activity of sensation, for animals move their bodies to look around, to listen more carefully, or to feel things.

The power of locomotion follows upon desire and is a means of satisfying desire. As such, reflex actions do not belong most properly to the power of locomotion. When someone's knee is tapped, his leg jerks. This movement does follow upon sense knowledge. Nevertheless, it does not follow upon emotion or desire, so it does not properly belong to locomotion.

Possibly, reflex actions do not need sense knowledge. The reflexive movement of the leg occurs even before the electrical impulse of the neurons has reached the brain. After it reaches the spinal cord, another electrical impulse returns to the leg, causing the jerk. Only when the initial electrical impulse reaches the brain do we as persons become conscious of the tap upon our knee. Does it follow that the movement of the leg is independent of awareness? Perhaps. It certainly follows, *if* we maintain the Cartesian view that consciousness occurs only in the brain. Another possibility, however, is that the common sense (as described in the last chapter) resides in the brain. Only with the common sense are we aware that we are aware. Nevertheless, we might be aware of the tap upon the knee (but not aware that we are aware) before anything reaches the brain.

Some plants might appear to exhibit a power of locomotion. Heliotropic plants such as the sunflower, for instance, follow the movements of the sun, and plants such as the Venus fly trap move rapidly to capture insects. These movements, however, are not

21. *ST*, I, q. 75, a. 3, ad 3; I, q. 78, a. 1.

triggered by consciousness or by conscious desire. Certain stimuli cause certain chemical reactions, which then trigger movement. What Aquinas means by the power of locomotion, then, is not any and every responsive movement of a thing; rather, it is movement arising from conscious desire, which is found only in animals.

THE EMOTIONS AND REASON

As noted above, while the internal senses are shared with the animals, they are distinctive in human beings, because reason (found only in human beings) interacts with the internal senses. The same may be said of the emotions. They are shared with the animals, but in human beings they are distinctive. Reason interacts with the emotions (by way of the internal senses), so that human emotions are different from animal emotions.

Human emotions differ from animal emotions, most prominently because they can be guided by reason. Our emotions are not brute facts over which we have no control. Rather, we can consider the object of an emotion to gain control over the emotion. If we are angry, for instance, we can reflect and come to recognize that the injury against us is slight, thereby mitigating the anger. We are not victims of our emotions, as if we must do whatever they bid. To the contrary, we can shape our own desires.

Thomas speaks of three different kinds of control that we might have over the emotions. First, the reason can guide emotions, as described above, by reflecting upon the object of the emotion.²² When this fails (as it often does), we still have the ability to act upon the emotion or to refuse to act upon the emo-

22. *ST*, I, q. 81, a. 3; I-II, q. 17, a. 7.

tion.²³ If Sam is angry at Rachel, for instance, he can first try to recognize that he does not have a just cause, thereby minimizing his anger. If that fails, he can still choose not to yell at Rachel. Finally, Aquinas notes that the material element of the emotion, that is, the bodily change, can also affect our emotions. He says that we do not have control of this material element.²⁴ Nevertheless, we can sometimes do something about it. Foods that we eat (or pills that we take) can influence this material element, thereby influencing the emotions. Paula might find, for instance, that when she drinks coffee, she gets angry more easily. She can manage her anger, then, by refraining from drinking coffee.

In our age, we have taken to this third option (by way of psychotropic medications), to the neglect of the other two. Medications such as antidepressants can be a powerful aid in controlling our emotions, but they should not be taken as a substitute for the kind of control that Aquinas recommends. It is more fitting for us as human beings to master our emotions by way of rational guidance, a guidance that is encouraged in certain kinds of psychological therapy, such as cognitive behavioral therapy. As human persons, we are indeed animals, but we are also more than animals.

23. *ST*, I, q. 81, a. 3.

24. *ST*, I-II, q. 17, a. 7.

Mechanism

Nothing exists except atoms and empty space; everything else is opinion.

Democritus

All the effects of nature are only the mathematical consequences of a small number of immutable laws.

Pierre-Simon Laplace

Before we examine the powers of reason and will, which are peculiar to human beings, we wish to examine the causes of the immanent activities we have discussed so far. Without doubt, neural activity in the brain plays some causal role in our conscious activities. Once the physical form is received into the sense organ, neural firing begins. Furthermore, when we imagine or when we remember, the brain's neurons are active. The same conclusion can be reached concerning emotions.

The question is not whether neurons play some causal role with regard to mental activities. Rather, the question concerns the precise nature of that causal role. In particular, does the activity of the neurons suffice to explain mental activity, or is something further needed? More particularly yet, we wish to

determine whether mental activity requires some causal source that cannot be reduced to the simpler causes of the parts.

MECHANISTIC REDUCTIONISM

The kind of reductionist argument at issue is exemplified by an old-fashioned watch, operated not electronically but by springs and gears. What accounts for the movements of the hour hand, the minute hand, and the second hand? A causal explanation can easily reduce these movements to the movements of the parts within the watch. The movement begins when the spring is wound up. This spring naturally tends to release its pent-up energy by unwinding, and if it were left to itself, then it would do so quite rapidly. Within the watch, however, the unwinding can occur only slowly, for the spring is attached to a bar or shaft, which is attached to a gear, which in turn is attached to other gears. Ultimately, the spring is allowed to unwind only one gear stop at a time before the unwinding is momentarily paused. Through a series of gears, this slow unwinding ultimately moves the hands of the watch. Everything can be explained, then, by the movements of the parts.

Can the same be said of mental activities? When a neuron is sufficiently stimulated, an electrical impulse travels down the length of its axon, which then leads to the release of neurotransmitters. These transmitters may sufficiently stimulate nearby neurons, so that these in turn are fired with an electrical impulse, thereby releasing other transmitters, and so on. The firing of a complex web of neurons, it seems, can be explained much like the movement of the gears in the watch. The transmitters trigger a change in electrical charge, which, if sufficient, triggers an electrical impulse, which then triggers the release of further transmitters, and so on. Which neurons fire depends upon the

complex connection between neurons and upon what kind (and how many) neurotransmitters stimulate a neuron. The whole series of electrical impulses can be reduced to the movement of the many parts.

Some people have an idea—which may be called “mechanism”—that everything that happens in the world can be explained through a reduction to the activities of the parts. Such reduction is evident in machines (hence, the name “mechanism”), such as the watch discussed above. Of course, many things can be explained through reduction, but mechanism makes a stronger claim: *everything* can be explained through reduction. Our concern with this claim is focused on one kind of activity, namely, consciousness. Mechanism claims that consciousness—as well as everything else—can be explained entirely in terms of the activity of smaller parts. This claim, however, is far from evident. Is consciousness in fact reducible to the firing of neurons?

Does the complex firing of neurons in fact explain conscious awareness? It might seem that it does. Consider the optical cortex, which is located at the back of the head. When Kenny is looking at a tree, the neurons in his retina are stimulated, triggering electrical impulses, which then trigger other neurons, ultimately leading to a pattern of neurons firing in the optical cortex. This pattern has the shape of the tree that Kenny sees. Evidently, then, Kenny is seeing by way of these neurons firing.

Or is he? Certainly, the neurons are necessary, as can be seen in individuals whose optical cortex has died. Although their eyes continue to function, these individuals are unaware of seeing anything. Their retinas still fire, and other neurons fire in response to the retinal firings. These people can even respond to objects in their environment, but they are not conscious of seeing them.

Neuronal firing, then, is necessary for sight. It does not follow that neuronal firing is *sufficient* for sight. Sufficient means

“enough”: in other words, a sufficient cause is enough to bring about the effect. Many things that are necessary for an effect, however, are not sufficient. Gasoline in the tank of a car is necessary for a car to move, but it is not sufficient. Many other causes are needed in order for the car to move. A portion of the gasoline, for instance, must be pumped into the chamber, and this gasoline must be ignited, the pistons must move, and so on.

Neurons are necessary for awareness, but are they sufficient? Is the firing of neurons enough to explain consciousness, or is something else needed? The evidence of neuronal firing indicates only that the neurons are necessary. The evidence in no way indicates that the neurons are sufficient.

In some sense, Aquinas provides little help in answering this question. After all, he knew nothing of electrical impulses in neurons. Nevertheless, he was aware that nerves are involved in consciousness. Furthermore, he thought that the material makeup of the nerves was insufficient to explain consciousness. Ultimately, Thomas thought, consciousness was possible only through the soul.¹

Thomas cannot tell us about impulses in neurons, but he can at least provide us with principles by which we might answer the following question: Are neurons sufficient to explain consciousness? In particular, what we now know of transient and immanent actions can help us to answer this question. On the one hand, the firing of the neurons is a certain kind of transient action. On the other hand, we have seen that consciousness is a kind of immanent action. Can the difference between these two kinds of actions help us to answer our question?

We will approach the question by asking another question: Can the arrangement of transient actions bring about a new kind of action? In particular, can it bring about an immanent action?

1. *ST*, I, q. 77, a. 5, ad 1.

This question itself can be approached within the context of another question: Can computers think? We know how computers operate. They involve complex arrangements of transient actions. If they can think, then it seems that arrangements of transient activities are sufficient to account for the immanent activity of consciousness.

Do we have reasons to suppose that computers can think? They can achieve some amazing feats. Computers, for instance, can play chess better than the best human players. Face recognition programs can recognize people with high accuracy. Medical programs can diagnose illness with greater accuracy than many doctors. Computers solve complex mathematical problems more quickly and more accurately than human beings.

Of course, human beings do many things that computers cannot do. These deficiencies in computers, however, might be chalked up to insufficient complexity. At the current state of technology, computers have not yet reached the complexity of the human brain. With time, perhaps, computers will advance and be able to do many of the things that human beings can do.

INTERNAL AWARENESS AND EXTERNAL BEHAVIOR

Can we conclude, then, that computers can think, or at least that they will be able to think when they have achieved sufficient complexity? This question can be clarified through a distinction between internal states of awareness and external behavior consequent upon awareness.² When Brett says, "I am hot," he exhibits a certain external behavior observable to those around him. Preceding this external behavior, Brett has an internal state of feeling hot. This internal state, however, is not observable to those around him, although Brett himself can observe it.

2. *ST*, I-II, q. 17, a. 4.

Suppose that Brett opens a door for Anna as she approaches it, and he then closes the door behind her after she passes through. Prior to this external behavior, Brett has an internal awareness that Anna is approaching. While others can observe the external behavior of opening the door, only Brett himself has access to his internal state of awareness.

Suppose, on the other hand, that Anna approaches the door but neither Brett nor anyone else is present. Nevertheless, as she approaches, the door opens; after she passes through, the door closes. She has, of course, entered through an automatic door, such as are typical at grocery stores. The door mechanism has exhibited behavior similar to Brett's. When Anna approaches, the mechanism opens the door; after she enters, it closes the door. If the mechanism exhibits similar external behavior to Brett, what should we conclude concerning internal states of awareness? Brett is aware of Anna's approach. Should we say the same concerning the door mechanism? We do often say that it "senses" her presence. Is it doing, then, exactly what Brett does?

Most of us are inclined to think otherwise. Brett is aware of Anna; the door mechanism is not. But why? After all, for both we have access to the same data, namely, the external behavior. For neither do we have access to the internal states (since Brett alone has access to his own awareness). With the same data, why do we reach opposite conclusions?

We do know that if we ourselves were in Brett's position, then we would have awareness of Anna. We recognize that Brett is like ourselves; therefore, we conclude that he, like us, must have some internal state of awareness.

But in what way is Brett like ourselves? Perhaps the door mechanism, as well, is like us. It is certainly different from us, for it is mechanical while we are living. Still, the door mechanism might be like us in what really matters. Although not living, it

might have sufficiently complex circuitry to give it conscious awareness. It might be like us in the complexity of its wiring, such that it has internal states of awareness.

Notice the relationship between the external behavior and the internal awareness. The former is a sign of the latter. We observe people's behavior, and we then reach conclusions concerning their internal awareness. Brett says that he is hot, and we conclude that he is feeling hot. Again, as Brett puts his hand to the fire, he cries out and then jerks his hand back; we conclude that he is feeling pain. As we have seen, with our senses we perceive physical sensible qualities; we do not perceive substances themselves, nor do we perceive other people's internal states. Consider another example. When Sam yells at Rachel, what she senses is certain sounds; she "senses" his anger only incidentally, as a conclusion reached by other powers beyond her senses. Likewise, when Brett cries out in pain, we sense his pain only incidentally.

We do the same for animals. We observe a dog growling (external behavior), and we conclude that he is feeling threatened (internal emotional state of desire). We observe a bird pick up a worm (external behavior), and we conclude that it is aware of the worm (internal state of awareness). In this respect, then, we treat animals just as humans. Automated mechanisms, however, are another matter. We are not so ready to conclude, for instance, that the door mechanism has awareness.

It follows that while the external behavior is indeed a sign of the internal state of awareness, it is not an infallible sign. Sometimes the external behavior is present but the awareness is absent. After Sam yells at Rachel, she concludes that he is angry with her, but in fact he is not. He is simply putting on a show. The external behavior of anger is present, but the internal state is absent. Likewise, perhaps Brett cries out only to deceive others

into thinking that he feels pain. The external behavior of pain is present, but the internal state is absent.

We might say the same thing concerning certain movements of plants. When a fly lands on a Venus fly trap, the plant's leaves snap shut. This external behavior in the presence of the fly is akin to Brett's external behavior in the presence of Anna. Nevertheless, we do not conclude that the plant is aware. Rather, the presence of the fly triggers certain chemical reactions, leading to a spring reaction in the plant. The external behavior of awareness is present, but the internal state is absent. We are apt to reach the same conclusion concerning the door mechanism. The external behavior of awareness is present, but the actual awareness is absent.

In short, external behavior is a sign of an internal state of awareness, but it is not an infallible sign. The external behavior can have other causes besides the internal state of awareness. The external behavior of the door mechanism, we suppose, is caused by electrical circuitry, without any awareness.

The distinction between external behavior and internal states of awareness helps to clarify the question before us. Can computers think? If by "think" we mean only certain external behavior, such as moving certain chess pieces in a coherent manner, then unquestionably computers exhibit particular instances of "thinking." On the other hand, if by "think" we mean the internal state of awareness, then it is not so clear that computers can think. Our concern is with the latter question, for the internal states of awareness—but not the external behaviors—are instances of immanent activity.

THE CHINESE ROOM

Can a sufficiently complex arrangement of transient activities bring about external behaviors associated with thinking? Evidently so, but also unsurprisingly. The more important question concerns the internal states of awareness. Can a sufficiently complex arrangement of transient activities, such as we find in neuronal firing, bring about internal states of awareness? Can organized transient activity bring about immanent activity?

In a famous thought experiment called the “Chinese room,” the philosopher John Searle attempts to provide an answer.³ The Chinese room has an outside and an inside, just as we have external behavior and internal states of awareness. On the outside, people place messages written in Chinese into an “inbox,” and coherent replies, also written in Chinese, appear in an “outbox.” On the inside we find no one who speaks Chinese. Rather, someone who knows only English has shelves of books that provide instructions. Given a certain symbol, for instance, the person refers to a volume, which tells him to go to page 300, where he finds a list of possible symbols that might follow. He looks at the message he has received, scrolls down the list, and discovers that he must go to volume 213, where he finds another list. And so it goes, until the volumes instruct him to write down certain symbols to be placed in the outbox.

Searle asks whether the man in the room thinks in Chinese. He certainly has external behavior associated with thinking in Chinese. In no way, however, does he actually think in Chinese; he thinks only in English. Furthermore, the room as a whole cannot be said to think in Chinese. The books do not think at all (they are nothing more than paper and ink), although no doubt

3. See John Searle, “Minds, Brains and Programs,” *Behavioral and Brain Sciences*, 3 (1980): 417–57.

the person who wrote the books thinks in Chinese very well. The room as a whole has no thoughts beyond the English thoughts of the sole occupant. Nowhere, then, does anyone or anything think in Chinese.

The problem, says Searle, is that thinking involves content. In contrast, the room has—with regard to Chinese—only syntax, or the following of certain procedural rules. The books embody a set of rules that the occupant is able to follow. Likewise, thinks Searle, computer programming involves a set of rules. Given a certain input, certain procedures will be followed, giving rise to an output. Nowhere in the process do we find content.

A computer program that plays chess, for instance, does not understand the content of the game of chess. Given a certain set-up on a chess board (“translated” into numbers), the computer will follow certain mathematical computations, involving “values” that have been assigned to certain patterns on a board. Ultimately, the computer will give, as an output, the pattern that has the greatest “value.” The computer has no awareness of the game of chess. It simply follows certain procedural rules. Of course, we might say that the computer “chooses” to move the knight to D3, but we say similar things of the Chinese room, for instance, that it “answered” a question.

Searle’s procedural rules are much like our organized transient activities. In some way, then, Searle is saying that an organization of transient activities, however complex, never gives rise to immanent activity, such as awareness of chess or awareness of Chinese.

ARRANGEMENTS AND NEW ACTIVITIES

We will approach the question from a more general standpoint, which does have the disadvantage of being somewhat vague.

Rather than ask, “Can an arrangement of transient activities bring about immanent activity?” we will ask, “Can an arrangement of transient activities bring about some new kind of activity?” If the answer to the latter question is “no,” then so also must be the answer to the former question. After all, immanent activity is certainly a new kind of activity, distinct from transient activity. If an organization of transient activity cannot bring about a new kind of activity, then it cannot bring about immanent activity, which is indeed new in relation to the organized transient activity. As mentioned, the more general question does have a problem. It is not always clear when an activity should count as “new.” Nevertheless, the question will help us to recognize what is transpiring when we organize transient activities.

Consider a simple arrangement: a pot, filled with water, placed over a fire. We have the same transient activity—heating—from beginning to end. The fire heats the pot, and the pot heats the water. What does the arrangement do? It does not bring about a new kind of activity. Rather, it directs activity. It directs the activity of the fire onto the pot, and it directs the activity of the pot onto the water.

Next consider a more complicated arrangement—the old-fashioned watch discussed above. The transient activities begin with the activity of the spring unwinding, which is then directed to the shaft, which is then directed to a gear, which is then directed to subsequent gears, which is ultimately directed to the hands of the watch. Does the arrangement bring about a new kind of activity? From beginning to end, it seems we have movement.

Perhaps, however, the whole watch does engage in a new kind of activity. After all, it tells time. The spring by itself does not tell time, nor does the shaft, nor do any of the gears, nor do the hands of the watch (just by themselves), but all of these parts together do tell time. Evidently, then, transient activity sometimes gives rise

to a new kind of activity. The transient activity of motion, when properly arranged, gives rise to the activity of telling time.

We must be careful, however, with the phrase “tell time.” We human beings “tell time” by comparing various events. We might compare the falling of a tree with the location of the sun in the sky, and say that the tree fell at noon. Historically, human beings have kept time largely by way of the heavenly bodies. Why? Because the movements of the heavenly bodies are regular and predictable. We can use their movements, then, as a kind of ruler against which we can place other events. Consequently, we might also speak of the sun as “telling time,” for it tells us when certain events occur. In this case, however, the meaning of “telling time” has shifted. When human beings tell time, they compare two events. When the sun tells time, its movement is one of the events compared. The sun’s “telling time,” then, is nothing other than its movement, which serves to tell time because it is regular.

In the same manner, a watch “tells time.” It provides a regular movement to which other events may be compared. The watch itself makes no comparison. Only human beings do. The watch’s “telling time,” just like the sun’s, is nothing other than its movement. Why does the whole watch “tell time,” while the spring, the gears, and the hands individually do not tell time? Because we must tell time by way of some regular and predictable movement. By themselves, the movements of the spring and gears are not sufficiently regular. Only when properly arranged can the movement be regulated so that we can make comparisons to it. The new activity of “telling time,” then, is not new at all. It is simply movement. What has changed is that the movement is regular. Is regular movement a distinct and new kind of activity from movement? It would seem not. In other words, the arrangement of the various gears does not give rise to a new kind of activity. Rather, it directs the transient activity of movement,

from one gear to the next, ultimately regulating that movement.

Consider the more complicated arrangement of a computer screen, which involves a light source, such as an LED panel, which is behind a liquid crystal panel. The LED panel naturally gives off light when an electrical current runs through it. Liquid crystal naturally bends or turns when an electrical current runs through it. Turned one way, the liquid crystal blocks the light, so that it does not pass on to the screen. Turned another way, the liquid crystal lets the light pass through. When an electrical current runs through some parts of the liquid crystal but not other parts, some light is let through while other light is blocked. If the currents are organized properly, then a certain image appears. Light might be allowed to pass through, for instance, in the shape of a tree, or light might be blocked in the shape of the letter B, thereby displaying the image of a black letter B.

Does the arrangement of the screen give rise to a new activity, not found in the activities of the parts? Perhaps it has the activity of forming or portraying images, which none of the parts have. When we examine this activity, however, we find that it is nothing other than shining light in certain shapes. The activity of shining light is found in the LED panel by itself. The shapes simply come from the blocking of the light at certain points. This “shaped light” is not a new kind of activity. Once again, what the arrangement seems to do is to direct transient activities, rather than create new activities. The arrangement of the screen directs the activity of light, so that it passes through at some points but not at others.

Of course, underlying the computer screen is a yet more complicated arrangement. The circuits must be arranged to turn parts of the crystal display while leaving other parts unturned. The point here is simply that the idea of having a light source, parts of which are blocked, is fundamentally no different from

that of making shadow puppets on the wall. “Forming an image” in such a manner is not a new activity distinct from having a light source and blocking part of that light source. These activities are found in the parts. What the arrangement does is direct these activities in a precise manner.

We cannot exhaustively examine every possible mechanical arrangement to determine whether each one gives rise to a new activity. Our short survey, however, has suggested a pattern. Arrangement of activities does not produce a new kind of activity. Rather, it directs the activities of the parts. As we have seen, transient activity always involves an agent that brings about some change in a patient. We now see that the arrangement of transient activity directs this activity, applying certain agents to certain patients. The activity of the fire, for instance, is directed onto the pot, which then in turn has its activity directed onto the water. Likewise, the activity of the spring is directed to the shaft, which then in turn has its activity directed to the gears.

The nature of arrangement, at least of arrangement of activities, seems to be nothing other than the directing of the activities of certain agents upon certain patients. Such direction does not create new activity. It utilizes the natural activities found in the parts. The screen, for instance, utilizes the natural capacity of liquid crystal to bend under the force of an electrical current. The possibility of bending is already found in the nature of the part. Unless some reason can be provided to the contrary, then, it seems reasonable to suppose that an arrangement of transient activities does not create any new activity.

We have indicated that the idea of a “new activity” is vague. When an airplane flies through the air because of the arrangement of the engine and the wings, do we have a new kind of activity? Is “flying”—a kind of self-sustained movement through the air—different *in kind* from movement on the ground? The

arrangement within the airplane directs the movement of the engine upon the propellers; the movement of the propellers is directed to the air. The movement of the air is further directed by the wings, which cause less pressure above the wings than below; finally, this difference in air pressure acts upon the movement of the wings, so that they move not only horizontally but also upward. Once again, it seems reasonable that “flying” is a matter of directed activity rather than a new kind of activity.

It is clear from what we have seen in previous chapters that immanent activity is distinct in kind from transient activity. In transient activity, the agent brings about a change in the patient, making the patient like itself. In contrast, in immanent activity, the agent changes itself, and it makes itself like the object. Immanent activity is not simply directed transient activity. It is something new. No arrangement of transient activity, it seems, can give rise to this new kind of activity. It follows that the awareness of immanent activity cannot be simply a matter of arranged electrical (transient) activity. While a computer might very well imitate the external behavior that we associate with thinking, it cannot have the internal state of awareness, which is a kind of immanent activity rather than transient.

COMPUTERS THINKING

A cursory examination of computer programs supports this conclusion. Consider the activity of “doing math.” As we have seen, this can be divided into the external behavior of providing an answer and the internal awareness of numbers and operations. Computers certainly do the former, but do they have awareness of numbers? Does a sufficient complexity of arrangement give rise to this awareness?

It would seem not. We can do math by way of pebbles, and

we might be inclined to teach a child in this manner. Traci might teach Dan the idea of addition by showing him four marbles and then moving an additional marble into the group of four, thereby making five. We are not apt to say that the marbles “do math”; they simply move. We certainly do say, however, that Traci and Dan “do math” by way of the marbles. If we change the marbles to beads, and place the beads upon strings, then we might have an abacus. Once again, Traci and Dan can do math by way of the abacus. We might even be inclined to say that the abacus itself “does math.” Ultimately, however, all the beads do is move, and the abacus “does math” only in the sense that it is a convenient tool by which human beings do math.

If we move the beads electronically rather than with our fingers, nothing essential changes. If the beads are changed into miniscule circuits, nothing essential changes. Such is the manner in which computers “do math.” By way of electrical circuitry, tiny “pebbles” are moved about, giving rise to certain arrangements, which are then interpreted by human beings, just as the beads on an abacus must be interpreted by human beings.

As any computer programmer knows, complicated computer programs—such as chess programs—are merely elaborately directed mathematics. Values are assigned to spaces on the board, to pieces, to arrangements of pieces, and these values are “translated” into arrangements of “pebbles” and the movement of these “pebbles.” Do computers have awareness of the rules of the game of chess? No more than pebbles have awareness of numbers.

We say that computers have “memory,” which is the same word that we use to describe a certain immanent activity. Does a computer have memory in the same way that Anna has a memory of what she did yesterday? Rather, it seems that computers have memory in much the same way that a notebook might be said to have memory. The arrangements of ink upon the paper

store information. When Anna has taken notes, she can return to the notebook and retrieve this information. How? Because she knows the connection that has been made between certain arrangements of ink (called letters) and certain ideas. The arrangements of ink have no awareness. All the awareness is in Anna.

We are amazed at the expansive “memory” of computers, but the amazement has nothing to do with the computer’s immanent activity. It is simply amazement at how much meaning can be given to very tiny arrangements, as if a notebook had its writing on the scale of nanometers rather than centimeters. The amazement is increased because these tiny arrangements can be rapidly transferred to larger arrangements upon a screen. From beginning to end, however, there is only transient activity facilitated electronically. The computer has no immanent awareness of stored information.

When viewing the amazing results of computer programs, people sometimes make the mistake of confusing the external behavior for the internal state of awareness. Searle points out that this mistake is fundamentally no different than claiming that a thermostat has thoughts. It has, someone might say, very few and very simple thoughts, such as, “it is too cold,” or “the furnace should be turned on.” The truth, of course, is that the thermostat has no thoughts. It has well-directed transient activities, such that electrical circuits are completed (turning the furnace on) or interrupted (turning the furnace off) based upon the natural expansion and contraction of metals at varying temperatures.

Consider, again, the automatic door that opens for Anna. The “electric eye” of the door mechanism turns circuitry on and off by the presence or absence of light (or electromagnetic waves). The door mechanism does not “sense” Anna’s presence—if “sense” means having some immanent awareness of her presence—but her presence does change the quantity of electromagnetic waves that

bombard a certain substance, which naturally conducts electricity, or does not, based upon the presence of electromagnetic waves. This substance, when connected to circuitry, is given the name “electric eye,” but it sees nothing; it simply conducts a current more or less based upon the presence of electromagnetic waves.

THE BRAIN IS MORE THAN A COMPUTER

Neuronal activity is a series of transient activities, facilitated electronically. Should we conclude, then, that the brain is just like a computer? It certainly is like a computer in that it involves directed transient activities, some of which are electrical. The brain, however, is not just like a computer. The brain has something more. In some manner, the brain is the subject—within the person—of immanent activities, such as sensing, imagining, remembering, and so on.

Perhaps, someone might argue, the computer also has this “something more,” so that with sufficient complexity of arrangement it becomes aware. We must be careful, however, to distinguish what we know about the computer from what we know about the brain. We know exactly what the computer is, because we have made it. We know that it is, fundamentally, an arrangement of agents directing their activities upon certain patients. The arrangement is very complex, and the activity is very rapid. Nevertheless, we know that from beginning to end it is nothing more than an arrangement, and we also know that arrangements of transient activities do not give rise to new kinds of activities.

What do we know about the brain? We know that it is a complex arrangement, which involves rapidly directed transient activities. We do not know, however, that the brain is *only* an arrangement. Indeed, we have reason to believe that it is something more. Why? Because we also know that the brain is instrumen-

tal for immanent activity. We know this amazing fact, in part, through first-hand experience of our own awareness. For ourselves, at any rate, we experience more than external behavior; we experience the internal states themselves.⁴

We impute this first-hand experience to others like ourselves. Rachel supposes that Sam has not only the external behavior of yelling but also the internal state of anger. This transfer to other human beings works because others are like us. It works even for animals, which are sufficiently like us. It does not work, however, for thermostats and for door mechanisms, which have certain similarities with us but also have crucial differences.

Most significantly, we know what these artificial mechanisms do *not* have: they have nothing beyond arrangements of transient activities. If we had not made these mechanisms ourselves, perhaps we would not be aware of this limitation. But we *have* made them. They are machines that direct transient activities, and they cannot thereby generate immanent activities. Complex arrangements of transient activities may be necessary for sensory consciousness, but they are not sufficient. Something more is needed.

Someone might protest that if the brain indeed has this “something more,” then why does it need neurons at all? Why does it need the complex arrangement of the brain? The answer to this question will become more evident over the next two chapters. At present, however, it is clear that the neurons serve to organize our perceptual world. An animal receives innumerable points of input from its senses at any given moment. The animal must respond to this information, and it can do so only if the information is well organized. The neurons, it seems, serve as an organizer.

Animals, we have suggested, have something more than mere organization of parts. What is this something more? This question will be the topic of the next few chapters.

4. *ST*, I, q. 87, a. 3.

Materialism and Dualism

I am nothing more than a thing which thinks, that is to say a mind or a soul.

René Descartes

The brain, it seems, has something more than organized transient activities. Or more precisely, the whole human being has something more, by which he has awareness. But what is that something more? In answer to this question, it is tempting to introduce the “soul.” Beyond their bodies, so the reasoning goes, human beings have souls, which are responsible for their consciousness.

Other words are related to the idea of soul. We speak, for instance, of “psyche,” which comes from the Greek word for soul and is the basis for such words as “psychology” or “psychotic.” According to its root meaning, psychology is the study of the soul, as appears in the title of this book. Likewise according to its root meaning, a psychotic person has a disorder of the soul. Aquinas uses the Latin term for soul, *anima*, from which we get the words “animal,” “animate,” and “inanimate.” An animal is a being with a soul, which is contrary to a common notion that only human beings have souls. Something that is animate is liv-

ing because it has a soul, while what is inanimate has no soul. By this meaning, then, that which has a soul—the animate—extends beyond human beings, to animals and plants as well.

Unfortunately, the idea of a “soul” carries much baggage. We have images of a “ghost in the machine.” The body is viewed as a kind of biological machine, and the soul is a kind of spirit or ghost that resides in the machine. The idea of the soul also carries with it thoughts of an afterlife and ideas of immateriality or spirituality. Perhaps some or all of these presuppositions will turn out to be true, but at present we are simply trying to discover the cause of consciousness. It is not helpful to bring in extraneous and unnecessary presuppositions.

ANCIENT AND MODERN APPROACHES

The ancient Greeks had a minimal way of approaching the soul, a way that left out all the baggage that has accrued over the centuries. By their account, the soul is whatever gives life.¹ It might turn out to be immaterial, it might turn out to persist after death, and it might turn out to be some kind of separate substance that resides in the body. It might turn out quite otherwise. It might turn out, for instance, that the “soul” is an entirely material principle that ceases to be with death; it might turn out that the “soul” is not a separate spiritual substance but merely a property of material beings. These are problems to be answered, not presuppositions of what a soul is.

Today, people commonly (but not universally) presuppose that the soul is peculiar to human beings. In this view, animals do not have souls. All the more, plants do not have souls. The Greek approach suggested above opposes this presupposition. If the soul is that feature of a thing that gives it life, then animals

1. *ST*, I, q. 75, a. 1.

as well as human beings must have souls, since they also are living; indeed, even plants must have souls. It does not follow that the Greeks were positing some kind of spiritual “ghost” within plants, since the soul might turn out to be something quite otherwise than a ghost in the machine.

In this Greek conception, the denial of the soul is rather nonsensical. Today, those enamored with the view called materialism would adamantly deny the existence of any such thing as a soul. But if we set aside the baggage associated with the “soul” and simply state that it is the principle that gives life to a thing, then even the materialist must concede that there is a soul, since he must concede that some things are living. He would not, thereby, be conceding a “ghost in the machine,” since the soul might well turn out not to be a ghost; it might turn out to be some sort of material principle.

The modern dispute over the soul, however, is not concerned with the principle of life; rather, it is concerned with the ghost in the machine. The dispute has two primary camps, both of which conceive the soul as a ghost in the machine. On the one hand, materialism denies that there is any such thing as a soul (that is, some kind of spiritual substance that gives life and consciousness at least to human beings). On the other hand, dualism affirms the existence of the soul as a spiritual substance that is separate from the body and by which a human being has conscious thoughts.

MATERIALISM

According to materialism, we are our bodies, and these bodies are nothing other than complex arrangements of chemicals. Consequently, most materialists will adhere to some version of mechanism, described in the last chapter, according to which all

the behavior of a thing can be reduced to the activities of its material parts. Just as the activity of a watch can be explained in terms of the activities of all the parts of the watch, so also the diverse activities of human beings can be explained in terms of the simpler activities of the chemicals that constitute the human being.

We have suggested that consciousness cannot be reduced mechanistically to the transient activities of the material parts of human beings. What, then, do materialists say about consciousness? Broadly speaking, materialism offers two approaches to consciousness.

On the one hand, they might simply deny the above premise, that is, they might claim that an arrangement of transient activities can indeed generate a new kind of activity. This claim is often joined to the idea of “emergent” properties, that is, properties that arise from the arrangement of parts. Each link of a chain, for instance, is rigid and can be bent only with great difficulty. When the links are put together, however, the whole chain is flexible and readily able to bend. This property of “flexibility” is said to be a property that *emerges* from the arrangement of the parts. It is not a property found in the parts by themselves but only in the union of the parts. Similarly, consciousness is not a property of inanimate chemicals by themselves. Rather, it is a property of the union and precise arrangement of inanimate chemicals.

Other materialists are uncomfortable with these emergent properties, especially the emergent property of consciousness. After all, the flexible bending of the chain is nothing other than a description of the movement of the individual links as they relate to the other links. There is no new property here, no new activity. There is only the activity or property of movement, but now described in relation to other parts. To speak of the whole chain “bending” is simply to speak of the links relating to one another.

Emergent properties as relating to “consciousness” are especially unsettling. After all, consciousness seems to have some rather odd non-materialistic attributes. As we have seen, it is an activity that does not change the object; it is an activity that is complete in itself and yet continues. To speak of consciousness “emerging” from the electrical impulses of neurons is little more than hand-waving. Our increasingly detailed awareness of the fine structures and activities of neurons has brought us not a single step closer to understanding how these arranged activities are associated with consciousness. Consciousness just seems to hang upon neuronal activity as some kind of mysterious accompaniment. It “emerges”—so the argument seems to go—because it *must* emerge. Why must it emerge? Because materialism is true.

To concede such an odd property, even when claiming that it can be explained—mysteriously—in terms of material causes, is to concede too much. At least, so think some materialists. They deny emergent properties, but they are left also denying consciousness itself. Ideas such as consciousness and awareness, they claim, are simply shorthand for a set of external behaviors. “Feeling pain,” for instance, is shorthand for behavior such as moaning, crying out, holding the “painful” limb tenderly, and so on. There is no inner state of consciousness. There is only external behavior.

So-called hard-behaviorism—which was behaviorism in its original form—is not simply the psychological view that we should study behavior rather than inner states, since those inner states are hard to get a handle on. Rather, it is the psychological view that behavior is the only thing to be studied; those inner states simply do not exist. Such hard-behaviorism has come to be associated with eliminative materialism, that is, materialism that eliminates conscious states.

The elimination of consciousness is a hard pill to swallow.

We cannot even begin to speak of the elimination of consciousness without some idea of what elimination is and without some idea of what consciousness is. But to have ideas is to have consciousness. It is little comfort to say that the “idea” of elimination is simply a matter of following rules about how to utter certain sounds (called words), which bring about observable reactions in other people. Such reduction is simply too fantastical. Even as we utter the words, we know that there is more to the words than a set of rules. We know, as Searle indicates, that under the words lies content.

When it comes to consciousness, then, materialism is left with two unpalatable options. On the one hand, it can affirm consciousness as a kind of emergent property, with no evidence concerning how it emerges. It just must emerge. On the other hand, it can deny the very existence of consciousness. The very denial, however, seems to rely upon consciousness itself.

DUALISM

Dualism hopes to offer another alternative. Consciousness is real enough, for we know it firsthand through our own experience. Furthermore, its various attributes are in some manner nonphysical, which leads us to conclude that consciousness cannot be explained entirely by physical causes. The only remaining option, suggests dualism, is to seek some nonphysical cause. This nonphysical cause is nothing other than the soul.

Materialism claims that a human being is a single thing, namely, his body. Or perhaps materialism claims that a human being is a vast multitude of things, namely, a collection of billions upon billions of chemicals. In contrast, dualism claims that a human being is two things (from which the name derives), namely, a body and a soul. A human being’s body explains all of

his material properties, while his soul explains his nonphysical properties, such as consciousness.

Somehow these two are united. The soul in some manner “resides” in the body, from which we get our idea of the “ghost in the machine.” Dualists are indeed inclined to view the body in mechanistic terms. The body is nothing other than a complex machine, whose activities can be reduced to the activities of the parts. The image of the ghost in the machine, then, is rather *apropos*. The body is indeed a kind of machine, and the soul—the ghost—in some manner resides in the body.

This view is often attributed to Descartes. Some deny that he held such a view, and they can find certain texts in support of their position. The more reasonable claim, however, seems to be that Descartes was simply inconsistent. Perhaps for religious reasons he wished to deny the ghost in the machine, but his philosophical principles seem to demand two separate things—a spiritual soul and a mechanistic body—no matter how intimately connected they might happen to be.

Descartes went so far as to deny the consciousness of animals. Why? Because, he says, they have no soul. They are simply complicated machines. Since consciousness comes from the soul, and since animals do not have souls, it follows that they cannot be conscious, although they clearly exhibit the external behaviors typically associated with consciousness. Kick your dog and he may yelp in pain, but he feels no pain, for he has no soul. He is a cleverly devised mechanism that reacts in certain predictable ways in reaction to certain stimuli.

The ghost in the machine is typically thought to be immaterial and immortal. It is in no way composed of material elements, and as such it cannot be broken up. It continues to exist, then, despite the breakup of the body. Its immateriality explains the nonphysical nature of immanent actions such as consciousness.

The soul is often associated with the very life of the individual. It explains not only his consciousness but also his continued living. When the soul departs (the ghost leaves the machine), the human being dies (the machine ceases to function). This link between the soul and life, however, does not seem to be demanded by the very nature of dualism. What dualism demands is the link between the soul and consciousness. Life is a separate question. Perhaps the connection between life and the ghostly soul is a throwback to the Greek notion discussed above, or perhaps it is linked to religious ideas.

Dualism faces many difficulties. Perhaps the greatest of these concern the relation between the body and the soul. Somehow the two are connected, but the precise relation between the two remains obscure. Indeed, the very need for the connection remains obscure. If the soul, by its nature, is the kind of thing that can be conscious, then why is its conscious activity tied to this one particular body? Why does a soul need sense organs? Why does it need a brain? If the soul is the kind of thing that can move a body (as when someone thinks to raise his hand and then actually raises his hand), then why is it restricted to this one body? If Traci wants to write, then why does she have to move her body in order to pick up a pen? Why not use another body, or why not simply think and move the pen directly, without the intervention of her hand?

Certainly, we observe an intimate connection between our mental life and our bodily life. We are conscious only with a body. Damage to the brain can damage our ability to be conscious. We do move a body but only one body (at least only one body directly), that is, our own body. Experience establishes these connections beyond doubt. Apart from these experiences, however, dualism would not expect to find these connections. Nothing about the nature of the ghostly soul indicates any dependence upon the body. By its own nature—apart from a body—the soul is conscious.

Dualism, then, has an inherent conflict with the data of experience. By its nature, dualism should expect no connection between the soul and the body, yet the connection is undeniably present. Experience, then, points to the rejection of dualism. Dualists have tended to focus upon a secondary question—what is the precise nature of the connection between the body and the soul—while ignoring the more fundamental question—why is the connection present at all. Dualists, if they are to remain consistent with themselves, should deny the connection; instead, they try to explain its nature.

The attempt at an explanation has led to an ongoing dispute with no satisfactory solution in sight. We need not dwell upon this dispute. Some dualists, it seems, are forced to deny the conservation of energy, because they require a change arising from the soul apart from the physical energy of the body. According to other dualists, the body and the soul just happen to coincide in their activities, so that, given certain neural firings, there happen to be corresponding conscious experiences in the soul. The twists and turns made in the attempt to explain the relation between body and soul become much too complicated for us to address here. However this dispute is resolved, dualism has already failed in a more fundamental way: it has proposed a soul that has no need of a body.

UNITY

Both dualism and materialism face difficulties concerning the unity of a human being, or of any animal for that matter. Common experience seems to affirm a fundamental unity in human beings. We experience that we ourselves see, hear, imagine, and remember. Within this experience is the recognition that we are unified beings. Sarah recognizes, for instance, that she

herself is one person who is now seeing the table. We readily reach a similar conclusion concerning other human beings and other animals. Sarah knows that Sam is one single being, and she knows that her dog Abby is also a unified being.

Dualism divides the unity of the human being into the soul and the body. The soul is one substance and the body another. Dualism is forced to say that the soul alone senses, but for some mysterious reason this soul has to be tied to another substance, namely, the body. Furthermore, the separate bodily substance is intimately connected with mental activity. In the end, it seems as if the act of sensing is really carried out by two separate substances, somehow in tandem.

At first glance, materialism avoids these difficulties concerning unity. After all, it affirms the existence of only one thing, namely, the body. It does not divide the human being into the body and the soul. Under scrutiny, however, materialism faces even greater difficulties surrounding the unity of the human person. For materialism, it is far from clear what is doing the sensing. Is it the chemicals? That would be rather odd, since chemicals are not the kinds of things that can sense. Is it, then, the combination of chemicals? This answer, as well, is rather odd. That would imply a disunity even more profound than dualism. The agent of the activity of sensing would not be one thing but a collection of many things. Furthermore, none of these things on its own—none of the individual chemicals—would be sensing. Only the whole collection would have the activity of sensing. Sarah's perception that she herself is sensing as a unified being would turn out to be some kind of grand illusion. A swarm of chemicals would in fact be sensing the table. Given this bizarre conclusion, one can see how the hard-behaviorist rejection of consciousness becomes tempting.

We sometimes attribute unity to what is only a collection.

We speak of a car, for instance, as one thing. In fact, it is a collection of many substances. These multiple substances, however, do have a certain unity to them. They are unified, for instance, by being in one place. This unity, however, is not the unity of a single substance. Rather, it is the unity that comes from a shared property.² All of the many substances within the car are united through the property of being in a certain place. The same unity might apply to a pile of junk in Dan's backyard, which includes old tires, old shoes, a broken-down TV, a dead mouse, and so on. The pile is, in a sense, "one thing," but it is not a single substance. It is multiple substances united by way of a property.

The car does have greater unity than the pile of junk. It is unified, for instance, by a single encasement. Furthermore, it is unified by the ordering of one part to another in a precise relationship, for the parts of the car make a car only when put together in the right way. These further unities, however, still arise from properties. The car remains a collection of multiple substances united through certain properties, such as a relationship to encasement and a relationship of one part to another.

In contrast, Sarah is not a collection of multiple substances; she is a single substance. Her own experience of sensing—and her experience of engaging in other activities—verifies her unity. Of course, materialism sometimes wishes to exclude such "subjective" experiences from the domain of valid evidence. It is left, we have seen, denying the very existence of consciousness. It is also left denying the unity of human beings.

As we have suggested above, we readily attribute to animals a unity like our own. After all, animals share with us the unified agency of sensing, imagining, and so on. Can we say the same of plants? It would seem not. Consequently, we are less certain of the unity of plants than we are of animals. We might sup-

2. *ST*, I-II, q. 17, a. 4.

pose that they are like cars. They are a collection of substances unified through an encasement and a precise ordering. On the other hand, we do recognize a unified agency in the activities of growth, maintenance, and reproduction. The plant as a whole reproduces; as a whole, it transforms food into itself; as a whole, it maintains its order and energy.

The sense of this unity is strengthened through our own experience. We know that our body replaces itself: cells die off and are replaced. Over a ten-year period hardly any of the same material might remain within us. Yet we recognize that we are, at this moment, the same person that we were ten years ago. We remain one, it seems, despite the replacement of various materials. When we take on food, then, we are not simply adding on separate substances. Rather, we are transforming the food into our own substance. If we as human beings can maintain this substantial unity despite the multiplicity of materials that come in and out of our bodies, then it seems plausible that plants can as well. After all, they engage in the same activities of growth, maintenance, and reproduction.

THE SOUL AS THE PRINCIPLE OF LIFE

We have introduced the topic of plants because of the Greek notion of the soul, discussed above, as that which gives life. Since plants seem to be living substances, just like animals, they too must have souls. As we have seen, with this view of the soul, even materialism must grant the existence of the soul. Materialism will differ from dualism in how it defines the soul.

According to dualism, the soul is a separate kind of substance. In contrast, according to materialism, the soul—in the Greek sense—seems to be a certain property. The difference between a living dog and the corpse of a dog is simply the property

of arrangement, much as a car and a heap of the parts of a car differ in their arrangement. Both are collections of substances. Indeed, both are collections of pretty much the same substances. They differ in the relationship of these substances. In the living dog, these substances are ordered in a precise way, so as to give rise to living activities. If the soul is simply that which gives life to a thing, then materialism will say that the soul of the dog is the organization of its parts.

So far, then, we have seen two views of the soul. On the one hand, dualism says the soul is itself a substance separate from the body. The soul is responsible for all those activities that cannot be accounted for in mechanistic terms, such as conscious awareness. For some reason this soul is connected, in life and in its activity, to a particular body. On the other hand, materialism says the soul is not a substance but a property. A living thing is not one substance but a collection of multiple substances. This collection of substances is living, says materialism, on account of its arrangement, its soul.

As we have seen, neither of these accounts is satisfactory. Both face troubling difficulties. Must we settle, then, upon one or the other as the best we can do? Or is there some third alternative?

Hylomorphism

We must no more ask whether the soul and body are one than ask whether the wax and the figure impressed on it are one.

Aristotle

The harmony of soul and body—how much that is! We in our madness have separated the two, and have invented a realism that is vulgar, an ideality that is void.

Oscar Wilde

In contemporary discussions concerning the soul, materialism and dualism are pretty much the only views in the landscape. Aquinas, however, rejects them both. He is mainly concerned with rejecting dualism, which he attributes to Plato, and which he characterizes as the view that the soul is the mover of the body.¹ The soul is like a puppet master and the body like a puppet. They are two separate things, one of which moves the other.

Aquinas's dispute with dualism does not concern the existence of the soul; rather, it concerns the nature of the soul. The

1. *ST*, I, q. 75, a. 4; I, q. 76, a. 1.

soul is not a kind of ghost in the machine, as dualism would have it; it is not a puppet master. Indeed, according to Aquinas the soul is not a thing at all. It is no more a “thing” than is the color of the table. We do not say that there are two things, the table and its color. Rather, there is only one thing, the table, which has the color brown as an attribute or property. Likewise, says Aquinas, there are not two things, the body and the soul. There is only one thing, the human being.²

What, then, is the soul? The answer to this question will take some explaining. We will approach it in what might appear to be a roundabout manner, by looking at what Aristotle has to say concerning change.

THREE PRINCIPLES OF CHANGE

Aristotle identifies three principles of change: a subject, a form, and a privation (or absence).³ Consider the change of water becoming warmer as fire heats it. The water begins cool and ends up hot. When we say that “the cool water becomes hot,” we express all three elements of change. The water is the subject of change, for it is the thing that changes. The increased heat is the form, for it is the new attribute that comes to be. Finally, the state of being cooler is the absence of the form that comes to be, that is, it is the absence of the heat.

All three elements, says Aristotle, are necessary for any change. Clearly, if there is a change, then there must be something new. Furthermore, if there is something new, then it could not have been there to begin with. If the heat is new, for instance, then the water must not originally have been hot. The change, then, must begin with the absence of the form. Heat at the beginning and the

2. *ST*, I, q. 76, a. 1.

3. *DPN*, c. 2.

same heat at the end is not change; it is remaining the same. Every change, then, must begin with the absence of some form and must end with the presence of that form. Privation and form are indeed necessary for every change.

The philosopher Plato seems to have stopped with these two elements of change, but Aristotle recognized the need for a third principle, namely, the subject of the change. The water heating, for instance, begins with the lack of heat *in the water* and it ends with heat *in the water*. These two—the lack of heat and the presence of heat—are inconsistent with one another only insofar as they reside in some single subject. The lack of heat in a rock, for instance, can be found side-by-side with the presence of heat in water. In contrast, absence of heat *in the water* and presence of heat *in the water* cannot coincide. If you have one, then you cannot have the other at the same time. Privation and form, then, imply change (as opposed to possible simultaneous coexistence) only when found in a single subject. The change implied is the change of the subject itself. When water is heated, it is the water that changes.

A change implies that something ceases to be and something else comes to be. The idea of the subject of change, however, indicates that something remains throughout the change (although it does not remain *the same* throughout the change). In the example of the water, the absence of heat is at the beginning of the change but not at the end. The state of being hot is at the end of change but not at the beginning. Only the water remains throughout the whole change.

Aristotle's analysis of change is difficult to dispute. Every change must have these three elements. There must be something that comes to be (the form), which therefore must not be at the beginning of the change (the privation), and there must be something that changes (the subject), which unites the form

and the privation by being the subject of both and by remaining through the change.

CHANGE IN PROPERTY AND SUBSTANTIAL CHANGE

What do these three elements of change have to do with the soul? Before we answer this question, we must first recognize that there are different kinds of changes. When heated, water becomes hot. In the fall, leaves turn yellow. When hit by another ball, a billiard ball begins to move. These are diverse kinds of changes: change in temperature, in color, and in location. All of these changes, however, can be roughly grouped under a single heading: "change in property." Heat, color, and location are all properties.

For change of property, the form is always some kind of property, such as heat, color, or location. Consequently, the privation must be the lack of some property. The subject of all such changes must be a substance, for it is a substance that has the property or lacks the property. As we have seen, the subject remains through the change. For a change of property, then, the substance remains, although its attributes change.

What if the substance itself ceased to be? Suppose that Dan dies. A change has occurred. Dan has changed from living to dead. Or has he? This way of expressing the change implies that Dan himself is the subject of the change. But if he is the subject of the change, then he has remained through the change. Dan himself, were he able, might object to this manner of putting things. Where is Dan after he dies? It seems plausible to say that he is no more. What *was* Dan has become a corpse, which is quite another thing from Dan.

Or consider when Dan first came to be at his conception. Before that there was no Dan. A change has occurred. But Dan

himself is not the subject of the change. The subject is both at the beginning of the change and at the end of the change, so if Dan is the subject of the change, then Dan must exist before he comes to be. To avoid such nonsense, we must conclude that Dan is not the subject of the change.

As long as we suppose that Dan is a substance (which seems plausible enough), then we have a problem. For change of property, some substance is the subject of change, which remains throughout the change. But if Dan is himself a substance, then (in the changes discussed above) no substance remains through the change. Rather, the substance itself changes. What was not Dan (sperm and ovum) becomes Dan; what is Dan becomes a corpse. One kind of substance is at the beginning of the change; a new kind of substance is at the end of the change. The substance, then, does not remain through the change and cannot be the subject of change.

Most fundamentally, then, changes are of two dramatically different types. Change of temperature, color, and location are certainly different kinds of changes, but they are not dramatically different, since in each the form is some attribute and in each the subject is some substance. Change in property, however, is dramatically different from change in substance. For change in substance, the subject cannot itself be a substance. Neither can the form be some property.

THE THREE ELEMENTS OF SUBSTANTIAL CHANGE

For change in substance, how are we to identify the three elements of change? We must begin by recognizing that, for all change, the subject forms a union with the form (or with the absence of form). At the beginning of the change, we do not have simply the absence of heat; rather, we have *water lacking heat*.

At the end of the change, we do not have simply heat; rather, we have *hot water*. The subject and privation unite as the origin of the change. The subject and form unite into the terminus of the change. For a change of property, then, the endpoint of the change is not simply some property; it is a substance with a property.

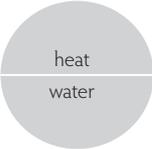
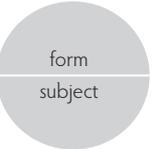
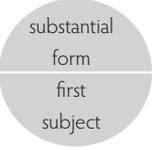
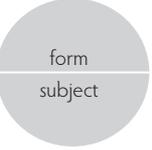
The same is true for a change in substance. The terminus of the change—which is the new substance—is the subject together with the form. It becomes even more evident, then, that the subject of the change cannot itself be a substance. Rather, the subject is part of what constitutes a substance, just as water is part of what constitutes hot water. A substance must always be constituted by subject and form. Whatever the subject is, it cannot itself be a substance but must be an element or component of a substance. In substantial change, whatever the form is, it cannot be a property, for a property presupposes a substance, while the form involved in substantial change *is an element of* a substance.

If we name this form “substantial form” and this subject (following the pattern of Aristotle), “first subject,” then we can portray the analogy as follows. As hot water is constituted by heat and water, so is any “property thing” (the union of a substance and a property) constituted by its property and the substance; likewise, every substance is constituted by substantial form and first subject; consequently, Dan (as a substance) must be constituted by his own substantial form and by first subject. This analogy can be portrayed in a table that includes change of property and substantial change at both the individual and the general level (table 8-1).

The name “first subject” does not follow Aristotle precisely. His first subject is typically translated as “prime matter.” The word “prime,” of course, means nothing other than “first.” On the other hand, the words “subject” and “matter” have quite diverse meanings. Aristotle uses the Greek word *hylē*, which may be translated as “wood” and then also as “matter.” Aristotle adopts

122 *Hylomorphism*

Table 8-1 The composition of substances

	<i>Individual</i>	<i>General</i>	<i>Universal</i>
The result of change of property	hot water: 	substance with property: 	result: 
The result of substantial change	Dan: 	substance: 	result 

the word from the idea of wood being the subject of the change, as when someone carves a figure out of wood. The property that comes to be, in this case, is a new shape, which in Greek is *morphē*. The combination of the two—shaped wood—gives us the name hylomorphism.

When speaking of the view of hylomorphism, the term “prime matter” is difficult to avoid, given its widespread usage, but it has its disadvantages. For one thing, “matter” conveys the idea of a substance, but “prime matter” is not a substance but an element of a substance. For another, with modern physics, the term “matter” has taken on a very specific meaning. For these reasons, I will supplement the term “prime matter” with “first subject,” to remind the reader that we are not dealing with “matter” in the modern sense.

We still know very little about substantial form and first

subject. We know that prime matter remains through the substantial change, and we know that the substance is constituted by first subject and substantial form. Another example will help provide more information. Consider clay, which can be shaped into many objects. Suppose Krystyna is a potter, who can shape her clay into a vase, a plate, a cup, and so on. If she forms the clay into a vase, then we can say that the resulting vase is constituted by the clay and its particular shape. The clay, of course, is the substance that serves as the subject of a change in property, and the shape is the property. Using shape as the property is particularly fitting, since the word “form” can be a way of expressing shape.

This example reveals some important features of the subject and of the form. Notice that the clay is able to take on many shapes. Using the terminology we developed in chapter 2, we can say that the clay is in potential to many shapes. At any given time, of course, only one shape can be realized, but even then the clay (while wet) retains the potential to take on other shapes. If the potter has shaped the clay into a vase, it still has the potential to be reshaped into a cup or a plate. Notice as well that the shape defines the resulting object. Precisely its shape makes this clay to be a vase rather than a plate. The shape, we might say, makes it to be what it is. In contrast, the clay by itself is potentially many things and is determined to some one thing by its shape. Ultimately, a vase is what we have called a “property thing.” It is a certain substance—that is, clay—together with a certain property—that is, shape. Through the clay (while it is yet wet), the vase is in potential to be many property things, such as a vase, a plate, or a cup. Through the shape it becomes one particular property thing.

Likewise, the first subject must be in potential to be many substances. The first subject is potentially a human substance, as with Dan, but it is also potentially fertilizer, as when Dan dies.

The first subject within fertilizer is potentially grass, for it can be taken up into the grass and transformed. The same first subject is potentially a cow, for the cow can take in the grass and transform it into its own substance (through the power of maintenance or growth discussed previously). The same first subject, now within the cow, is potentially a human being again, since a human being might eat a hamburger, transforming it into himself. The same first subject is in potential to these many substances, even as the same clay is in potential to be a vase, a plate, a cup, and so on.

Furthermore, just as the shape of the clay determines the clay to be something definite (to be a vase or something else), so the substantial form determines first subject to be the kind of substance it is. Given a certain shape, the clay is a vase. Analogously, given a certain substantial form, prime matter is a human being. Given a different substantial form, it is fertilizer, grass, a cow, and so on. The shape of the clay makes it to be what it is. Similarly, substantial form makes a substance to be the kind of substance it is.

In short, prime matter is that by which a substance can become something else, that is, a different kind of substance. It is the potential, within a substance, to be diverse kinds of substances. Just as wet clay shaped like a vase has the potential to be reshaped into a cup, so first subject, within a substance such as Dan, has the potential to become diverse kinds of substances. Dan has within himself a potential element, by which he can become fertilizer. This potential element within him—prime matter—is part of what constitutes who he is. Currently, he is not fertilizer; rather, he is a human being and only potentially fertilizer. He owes his existence as a human being—as opposed to fertilizer—to his substantial form, which makes him human. As a human being he is constituted, like all substances, by these two elements: first subject, by which he is potentially many sub-

stances, and substantial form, by which he is actually this kind of substance.

SUBSTANTIAL FORM AS AN EXPLANATORY PRINCIPLE

We have added much to our knowledge of first subject and substantial form. Still, it is difficult to wrap our minds around these concepts. Part of the difficulty is that we cannot imagine them, for neither is itself a substance or a property. We readily imagine properties, such as color or shape, and thereby we imagine the substances that underlie the properties. In contrast, we can imagine neither first subject nor substantial form. Neither is a property and neither is a substance underlying properties. Rather, each is an element, and together they constitute a substance.

We are comfortable with things that we can imagine, and we are uncomfortable with what is beyond imagination. For this reason, mechanistic reductionism is highly seductive. It tells us that we can explain everything in terms of some imaginable parts. The hylomorphic view of substances offers no such solace. It offers only the uncomfortable realm beyond imagination, a realm that we will examine in subsequent chapters.

Those inclined to mechanism typically find explanations in terms of substantial form to be simplistic and unsatisfactory. Hylomorphism might say, for instance, that a dog can see because it has the substantial form of an animal, which gives it the ability to sense. In contrast, the substantial form of fertilizer does not constitute the kind of substance that has the potential to sense. From the perspective of mechanism, this explanation seems to be nothing other than saying that a dog can see because a dog is the kind of thing that can see.

We have seen, however, that the hylomorphic explanation is not so simplistic. We begin by knowing that dogs can see. Fur-

thermore, we know that chemicals are not the kinds of things that can see. Somehow, the chemicals when belonging to a dog now have the ability to see. From where does this new ability arise? From the organization of the chemicals? This solution is unsatisfactory, because the organization of chemical activity gives us only directed chemical activity. Chemicals, however organized, remain chemicals, and chemicals are not the kinds of things that can sense. In contrast, dogs are the kinds of things that can sense. They must be, then, something distinct from chemicals; they must be—in substance—a sensing kind of thing. But what makes them to be this kind of substance? They might well be fertilizer, which is not the kind of thing that can sense. They must have, then, something that makes them to be this particular kind of substance. They must have, in short, the substantial form of a sensing thing.

The merits of this explanation are best seen in contrast to the alternatives. The chief merit centers around the unity of the agent. The dog as a whole sees. Dualism is forced to say that it is the soul alone that senses, but for some mysterious reason this soul must be tied to another substance, the body. On this view, the need for sense organs and for the brain (the organ of the internal senses) is a mystery that becomes more perplexing the more one attempts to resolve it. For hylomorphism, the need for a body is no mystery at all. It is precisely what one would expect. After all, there is not some unseen substance called the soul that is sensing. Rather, the dog is sensing, and the dog is a material substance.⁴ By necessity, then, he will sense with his material body. As with other organs, such as the heart, the sense organs are adapted to their function. This adaptation, as we have seen, is at least in part concerned with the rapid organization of information.

Of course, materialism would also expect that a dog should

4. *ST*, I, q. 84, a. 6.

need a body for its activities. What else is there (according to materialism) besides bodies? As we have seen, however, materialism has difficulty identifying what exactly is doing the sensing. Is it the chemicals out of which the dog is made? It would seem not. Chemicals are not the kinds of things that can sense. Why can they sense now that they are within the dog? Is it because they are organized chemicals? We have seen how unsatisfactory these accounts of sensation are.

We are led to the conclusion of substantial form. No other explanation can be satisfactory as long as we recognize that there are distinct kinds of substances. We do in fact recognize distinct substances. Why? Because we find activities that do not belong simply to the parts. In the materialist view, the world is rather flat. All substances are the same substance, or at the very least everything is made out of a limited number of basic substances, such as subatomic particles. Larger objects are just collections. No beings—such as dogs or human beings—have any new activities. They have only the activities of these basic substances, directed by way of organization.

A rich world populated with diverse substances, having new and original activities, demands substantial form and prime matter. Why? Because a new substance differs from other substances in its very being. It differs not merely by some property, as hot water differs from cold water. It must differ, then, by more than the property of arrangement. Something must make it entirely new in substance, and that something cannot itself be a property. From the analysis of change, we have seen that this something must be substantial form.

VIRTUAL PRESENCE

Hylomorphism demands the striking conclusion that the chemicals out of which we are made are not in fact chemicals. If we are indeed distinct substances, then we are not merely chemicals. What appear to be chemicals within are in fact substantially human. Every part of us must be substantially human. Our substantial form pervades our body, making it and each of its parts to be substantially human. If any part is removed, then it ceases to be human; a substantial change has taken place. Clare's eye within her is substantially human; if it is taken out of her, it ceases to be substantially human. A sign of this substantial change is that the eye no longer engages in human activity, that is, when removed, the eye no longer sees. And an eye that cannot see, says Aristotle, is not truly an eye but an eye only in name.⁵

Of course, the "chemicals" within our bodies act like other chemicals (outside of bodies) even while they are substantially human. Why? Because, says Aquinas, the chemicals are present virtually within us, that is, their powers are present within us and they can be drawn out of us.⁶ Nevertheless, the "chemicals" are not present within us as separate substances. They are substantially human while they remain within us. Take them out and a substantial change has occurred.

In their very nature the chemicals change. Outside the human being, they are oxygen, nitrogen, carbon, and so on. Within the human being, informed by his substantial form, they are substantially human. The properties remain essentially the same. Nevertheless, the "chemicals" within human beings, since they are part of the person, must be substantially human.

5. *DA*, bk. 2, c. 1, 412b20–22; also *In DA*, bk. 2, lect. 2, ¶239.

6. *ST*, I, q. 76, a. 4, ad 4.

THE SOUL

We began this lengthy discussion with an inquiry into the soul, yet it seems we have said nothing about the soul. We have discussed change (both substantial change and change in property), we have discussed the three elements of change, and we have discussed first subject and substantial form. But nowhere, it seems, have we discussed the soul.

In fact, we have been discussing the soul. We have simply been using another word, namely, substantial form. According to hylomorphism, the soul is nothing other than the substantial form of a living being.⁷ Recall that in the Greek notion, the soul refers simply to that principle by which something is living. A living substance, however, is distinct in kind from a nonliving substance. Dan while alive is one substance; his corpse is another entirely. He is a living substance—as opposed to a corpse—on account of his substantial form. That which makes him to be living—his soul—is his substantial form.

The substantial form of Dan is different from the substantial form of his dog Abby, which is different from the substantial form of an oak tree. The first makes Dan to be human, the second makes Abby to be a dog, and the third makes the oak to be a tree. In all three cases, however, the substantial form makes the substance to be living. In all three cases, then, the substantial form is a soul.

In other words, the word “soul” picks out a group of substantial forms.⁸ Under the general category of “soul” are found more specific kinds of souls, such as human souls, dog souls, and tree souls. These substantial forms differ from the substantial forms of non-living things. They differ, for instance, from the

7. *ST*, I, q. 75, a. 5; I, q. 76, a. 1.

8. *ST*, I, q. 78, a. 1.

substantial form of water or from the substantial form of calcium. While all substances must have a substantial form, only living substances have the substantial forms that we call “souls.”

Different kinds of living things, then, have different kinds of souls. The exact boundary of these differences may be hard to determine. It seems plausible that a tiger, a lion, and even a house cat may be the same kind of substances. They differ from one another, no doubt, but so does Paul differ from Diana, although both are human beings in their substance. Individual substances of the same kind can have many differences in properties. A German shepherd differs radically from a Chihuahua, yet both are substantially dogs. Likewise, a lion differs dramatically from a house cat, yet both might be the same kind of substance.

We know that we are dealing with different kinds of substance when we encounter new powers, which we recognize when we perceive new kinds of activities. Consequently, a dog is a different kind of substance than a tree, which is different than a human being. It is not as clear, however, that a dog is different in substance from a whale, for a dog and a whale exhibit many of the same kinds of activities and powers. It seems plausible enough to suppose that they differ in substance, but we cannot determine the matter with certainty. The boundary between different kinds of plants is fuzzier yet. Is a peach tree a different kind of substance than an oak tree? Perhaps.

Because the dog Abby has a different kind of soul than the oak tree, she has powers or capacities that the oak tree lacks. She has the power to see and the power to imagine, while the oak tree does not. Nevertheless, the oak tree does have living activities, namely, growth, maintenance, and reproduction. It is the kind of substance that can have these activities because of its substantial form, that is, because of its soul. Dan’s soul is different both from his dog Abby’s and from the oak tree’s. It makes him to be a

distinct kind of substance, a human substance. As we will see, it also gives him some distinct powers not found in other animals, namely, the powers of reason and will.

According to hylomorphism, then, the soul is not a distinct substance. It is not a ghost in the machine. The body is not one substance and the soul another, as dualism would have it. Rather, we *are* bodies, bodies composed of first subject and a soul. Because a corpse is visually similar to the person who once lived, we tend to refer to it as his body. We might say, then, that the corpse is the body without the soul. This manner of speaking is not quite accurate. According to hylomorphism, the corpse is not human, for it has no human substantial form. Of course, we call a corpse “human” because it has some connection with humanity, even as we call the picture of a horse a “horse,” although it is no such thing. Nevertheless, a corpse is not a human body that just happens to be lacking some ghost that we call a soul. It is no human body at all. It is more like the collection of chemicals that materialism imagines we are.

In fact, we are not a collection of chemicals. Nor are we ghosts in the machine. We are bodies of a distinct type. We are bodies ensouled.

The Problem of Universal Knowledge

As in every nature, so in the soul is there something by which it becomes all things, and something by which it makes all things.

Aristotle

The philosopher Plato postulated another world distinct from the world around us (the notion appears in a variety of his works, including the *Phaedo*, the *Phaedrus*, the *Republic*, and the *Theaetetus*). It is a kind of immaterial universe, often called the realm of Forms or Ideas, populated by “Things in themselves.” In the physical world around us we can find two sticks that appear to be equal, but in the realm of Forms we find “Equality itself.” In this physical world we can find beautiful landscapes and beautiful sunsets, but in the realm of Forms we find “Beauty itself.” In this physical world we find a good horse or a good car, but in the realm of Forms we find “Goodness itself.”

THE REALM OF IDEAS

Plato gave the name of “Ideas” to these things in themselves. We now reserve the word “idea” for the furniture of the mind, but Plato used the Greek word to refer to archetypes, even as Beauty itself is the archetype for a beautiful landscape. As such, Plato’s “Ideas” have more to do with the English word “ideals.”

These “Things in themselves” lack physical attributes. They are not visible, for instance, although this difference does not distinguish them from certain physical realities, such as air. More importantly, they fully realize the ideal and lack nothing that might belong to the ideal. While a good horse might still have some minor defects, Goodness itself can lack nothing of what counts for being good. While a beautiful painting might still have some defects that taint it, Beauty itself can lack nothing of what counts for beauty.

The Ideas in the realm of Forms differ from the physical things around us in a yet more important way. While the physical things are concrete individual realities, the Ideas might be said to be “abstract.” Furthermore, they do not belong to a single individual but apply universally to many individuals. The beauty in the painting is an individual property, but Beauty itself is abstract and can be realized in many different individuals.

Plato may have first posited the whole realm of Ideas for the sake of this “abstract” characteristic of Ideas. He was faced with a peculiarity of our knowledge that is reflected in our use of words. Sometimes we use proper names, by which we refer to single individual things. We refer to a dog as “Abby” or as “Fido.” At other times we use general words, such as the word “dog,” which is not tied down to a single individual dog but can refer to any dog at all. Likewise, “New York” is proper; “city” is general. “Mars” is proper; “planet” is general.

Plato observed that we make true statements using general words. We say, for instance, "Dogs have hair." Or we say, "Triangles have three sides." A statement is true, however, only if it corresponds with the reality in the world. The statement "Abby has red hair" is true only if in reality the dog Abby has red hair. Likewise, the statement "New York has more than eight million people" is true only if the city of New York in reality has more than eight million people. Consequently, since the statement "triangles have three sides" is indeed true, it follows that the reality must in fact correspond to the statement.

The truth of these general statements, however, faces a difficulty. For the statement "Abby has red hair" we can find the dog Abby in the physical world and determine whether she has red hair. The statement is true precisely because there is a dog Abby in the real world, and this dog Abby does indeed have red hair. If there were no dog Abby in the real world, then the statement could not be true. Similarly, since the statement "triangles have three sides" is true, it follows that we must be able to find "triangles" in the real world.

Of course, we do find triangles, and each one does indeed have three sides. Still, there is a problem. Each of those triangles is an individual concrete triangle. As we have seen, however, the word "triangle" is not proper; as such, it does not refer to just some singular individual triangle. Some people have thought that these general words refer to a group of singular things, such as the group of all triangles. After a little reflection, however, we realize that this idea is nonsense. If "triangle" referred to the group of all triangles, then the statement "triangles have three sides" would mean that the collection of all triangles has three sides; in fact, such a collection would have a vast multitude of sides.

The word "triangle," then, refers neither to an individual triangle nor to a group of triangles. Yet it must, thought Plato, refer

to some reality. Otherwise, we could not make true statements concerning triangles. For this reason, Plato posited the realm of Forms. The word “triangle” refers to the Ideal Triangle, which does not exist in the physical world around us but in the realm of Ideas. Statements concerning triangles are true, then, insofar as they conform to the idea of “Triangle,” which exists not in the physical world but in the immaterial world of Ideas.

THE PROBLEM OF UNIVERSALS

In this manner, Plato had identified—and offered a solution to—one of the most troubling problems in the history of philosophy, that is, the problem of universals. To what do universal words refer? They do not seem to refer to a single individual thing in the world around us, but that is all we find in the physical world. We do not find universal dogs walking around. For this reason, Plato posited another world, where we could find “universal Dog.”

Plato’s solution might seem a bit extreme, but we begin to sympathize with it when we come to recognize how vexing the problem of universals really is. We have expressed the problem of universals in terms of proper and general words. It is also often expressed in terms of individual or universal ideas. In this case, the word “idea” is used as John Locke used it, not to refer to the furniture of some immaterial Platonic world but to refer to the furniture of our minds. When we use words, we seem to have mental ideas underlying our words. When we speak of “triangles,” we must have some idea of triangles; when we speak of “New York,” we must have some idea of the city “New York.”

Language refers to reality, then, by way of ideas. The word “triangle” refers to the reality of triangles by way of the general idea of triangles. The word “Mars” refers to the planet of Mars by

way of the concrete or singular idea of Mars. Like words, then, it seems as if ideas might come in two sorts, either general or concrete. Just as verbal (or written) statements are true when they correspond to reality, so also are our ideas true when they correspond to reality. The thought that “triangles have three sides” is true if in fact triangles have three sides.

Plato’s solution to the problem of universals posits Ideas in the realm of Forms, but these Ideas have a kind of participated or shared existence in two other ways. On the one hand, individual things in the physical world in some manner participate, or take part in, in the Ideas in the realm of Forms. A beautiful painting, for instance, participates in Beauty itself. On the other hand, the ideas in our minds also participate in the true archetypes found in the realm of Forms. Our idea of a triangle corresponds to the true triangle in the realm of Forms. Ideas or Forms, then, have three different sorts of existence. First of all they exist in the realm of Forms. Secondly, they exist by a kind of participation in the physical world. Finally, they exist also in our minds.

When we use general words, or when we have general ideas, we know that they refer to something or other. The problem of universals addresses the nature of the object to which they do refer. As we have seen, general ideas do not refer to single individuals, nor do they refer to a group of individuals. Plato supposes they refer to ideal archetypes in the realm of Ideas, but this solution is unsatisfying as well. When we say “Abby is red,” we do not mean that she participates in Redness itself. We mean that she has the concrete property of being red.

Plato’s solution to the problem also introduces a new power not discussed so far, namely, the power of reason. Concrete or singular ideas, he said, can be found in the senses, including what we have called the internal senses of imagination and memory. Universal ideas, on the other hand, are found in a

power called reason. Plato pointed out that our senses (whether external or internal) simply do not capture what is found in universal ideas.

The point becomes clear when we try to imagine some universal. Try imagining, for instance, a universal triangle. This image must include everything that is common to each individual triangle. It has to include, for instance, the having of three sides. At the same time—and here is the difficulty—it cannot have features that restrict it to only a subset of triangles. If you imagine a right triangle, for instance, then you have not captured the notion of a universal triangle, since some triangles are acute and others are obtuse. You cannot correct the defect by imagining an acute triangle, since that excludes right triangles and obtuse triangles. But any image that you form of a triangle will be of some particular triangle, whether acute, right, or obtuse. The image simply cannot capture “Triangle in itself,” which includes acute, right, and obtuse but is not restricted to any one of them.

The point applies to other universals as well. Try imagining a universal human eye. You must imagine it as colored, since the human eye is colored, but you cannot imagine it as blue, since that excludes brown and green eyes. Nor can you imagine it as brown, since that excludes eyes of other colors. The universal idea of the human eye somehow includes all the diverse colors of eyes, yet is not limited to any one of them. No image we can form in the imagination meets this condition, for if we imagine the eye as colored, we must imagine it with some particular color.

The power of the imagination, then, is simply inadequate to form universal ideas. Consequently, Plato said that our universal ideas are found in the power of reason. This power does not form images but does have ideas or concepts with content. As we have indicated previously, we humans tend to be more comfortable with things that we can imagine. When we move into the realm

of reason, which stretches beyond imagination, we become unsettled.

For this reason, Locke, Berkeley, and Hume tried to restrict all our ideas to images. While Locke seems to have thought that he could form some kind of universal images, Berkeley and Hume were more realistic. They simply denied the existence of universal ideas. Like Berkeley and Hume, Plato was realistic with regard to images, but he was not tied to the comfort of what can be imagined; he was willing to acknowledge concepts without images. The concept of a triangle, then, is found within reason. It includes the notion of having three sides, but not as an image. Unlike an image, its content includes the possibility of being acute, right, or obtuse, but it is not tied down to any one of these.

The problem of universals becomes more acute (pun intended) when we are faced with this universal concept of reason. Surely, nothing in reality corresponds to it, for no triangle in reality includes acute, right, and obtuse (with regard to angles) but is not fixed to one of these. Likewise, no eye in reality is colored but is not some specific color. Little wonder, then, that Plato created a new reality not bound by the laws of the physical world.

THREE SOLUTIONS TO THE PROBLEM OF UNIVERSALS

The diverse solutions to the problem of universals have generally been divided into three kinds: nominalism, realism, and moderate realism. Realism is the view we have attributed to Plato. It says that universals exist—somewhere—just as we conceive them.¹ The view is called “realism” because it says that universals really exist outside the mind. Nominalism is the opposite extreme. It says that universals are simply convenient words that

1. *ST*, I, q. 84, a. 1.

somehow refer to a multiplicity of individual things. The view is called “nominalism” because it says universals are found only in the names (Latin: *nomines*) of things. It denies that anything in reality corresponds to universals. This denial is often applied to natural substances, such as dogs. Nominalism, for instance, asserts the following fairly plausible statement concerning dogs: there are individual dogs that share various features, but there is no universal dog, no shared nature that is found in every single dog.

The denial is more problematic when applied to attributes. Do we really want to say that there is no such thing as the attribute of having three sides that is realized in all triangles? What about the shared features of the many dogs, such as having hair? Do we really want to say that there is no such thing as the attribute of having hair, that can be realized in many diverse animals? The very denial of a universal nature applying to all dogs (which are substances) seems to sneak universals covertly into the domain of attributes. Without the shared attributes, by what criteria do we lump together the many things to which the word “dog” refers? The word “dog” could just as well refer to a group that contains an alligator, an oak tree, and a hair brush. Unless there are shared features by which we lump together several individuals, the use of common words is entirely arbitrary.

What we have called “moderate realism” is the view expressed by Aristotle and expounded by Aquinas. It denies the existence of the realm of Forms. The only world is the familiar world around us. In this world, we do not find universals. There are no universal dogs walking around, and we can spot no universal triangles. Nothing exists precisely corresponding to our universal concepts.

Should we conclude that universal concepts are false? Not at all. Moderate realism relies upon the distinction between leav-

ing out information and distorting information.² Consider the statement, “Albert Einstein was from Africa.” This statement is false because it distorts reality. On the other hand, the statement, “Albert Einstein was from Europe” is true, although it leaves out much information. It does not say, for instance, that Einstein was from Germany or that he was from the city of Ulm. Leaving out information, however, does not falsify.

When we leave out information, the reality does not exist simply in the manner of our representation. It exists with many more details than our representation provides. Suppose, for instance, that Linda says, “I got up this morning and went to work.” The statement is true because it does not distort reality. Nevertheless, the reality does not exist just according to this representation. In fact, Linda got out of bed, took a shower, got dressed, ate breakfast, and then went to work. Many more details yet could be provided (she ate bacon and eggs, and so on). The reality has much more in it than does the representation. That is precisely what it means to leave out information.

Similarly, if we say, “Triangles have three sides,” we leave out many details concerning triangles. We leave out, for instance, that any existing triangle must be either acute, right, or obtuse. Nevertheless, the statement does not distort reality, so it remains true. No triangle exists just according to this representation, that is, no triangle just has three sides without other attributes. No existing triangle has three sides without also being either acute, right, or obtuse. Our universal representation is neither acute, right, or obtuse, because it leaves out this information. It does not assert, however, that some triangle exists stripped of the details, as the representation is itself stripped of the details.³ If it did, then it would be false.

2. *ST*, I, q. 85, a. 1, ad 1.

3. *ST*, I, q. 85, a. 1, ad 2.

Such was precisely the error of Plato. He supposed that things existed according to denuded representations.⁴ In his realm of Forms, we could find a Triangle in itself, containing only three sides and not having the details of being acute, right, or obtuse. In his attempt to save the truth of general statements, he ended up falsifying them, for to assert that the reality exists just like our stripped representations is to distort reality. It supposes that by leaving out information we assert a reality that also leaves out the details.

ABSTRACTION

The term often used for leaving out the details is “abstraction.” It literally means, “to drag out.” The mind drags out some information, leaving behind the concrete details. The mind must “drag it out” because in reality the details go together. The mind “drags out” three-sidedness but leaves behind acute, right, or obtuse. In *reality*, these details cannot be left behind, but our minds have the capacity to consider just the three-sidedness, leaving out the other details. More precisely, the other details are not entirely left out. With our minds, we recognize that a triangle must be either acute, right, or obtuse, but when we consider it just as having three sides, we leave out the details of any one of these three types. In short, the mind still recognizes that these types are necessary in reality, but it leaves out which of them is in fact found in reality.

As we have suggested, abstraction cannot be accomplished by the internal senses. We cannot imagine a triangle that is three-sided but is not acute, right, or obtuse. Nevertheless, we can *conceive* of a triangle apart from its being acute, right, or obtuse. We cannot imagine a human eye that is colored but with

4. *ST*, I, q. 84, a. 1; I, q. 85, a. 1, ad 2; I, q. 85, a. 3, ad 4.

no particular color. We might imagine it as colorless (transparent) but that would be a distortion of the reality; it would be a falsification. Despite the inadequacy of the imagination, we do have the ability to *conceive* of the human eye as colored, leaving out the details of any particular color. This conception, then, cannot belong to the imagination or to any of the other senses. Our minds, then, must have some other power. This power is called reason.

What do we know when we know abstractly? We do not know something existing in the realm of Forms, for there is no such realm. Nor do we know simply the concrete reality, since the concrete reality exists with the details. Nor do we know a group of individual things, for the abstraction does not represent a multitude. What, then, is left for abstract concepts to know? Through abstract concepts we know the similarities between many concrete individual things, but we know the similarities while leaving behind the differences. When we know a triangle simply as three-sided, we know the similarity between many triangles; furthermore, we know this similarity without the many differences that exist between these many triangles.

When we know the similarities—without the differences—we do not falsify, for the similarities are indeed real. They are found in reality. Furthermore, we are not supposing that the similarities *exist* without the differences (which would be to falsify); rather, we are simply considering the similarities without including the differences in our consideration.⁵

For this reason, then, Aquinas might be described as a moderate realist. Our abstract ideas do correspond to reality. They are not mere ideas or mere words, as the nominalists would claim. On the other hand, they do not correspond to some “ab-

5. *ST*, I, q. 85, a. 1, ad 1.

stract reality,” as Platonic realism seems to think.⁶ Rather, they correspond to the concrete similarities found in the world. The similarities do not exist in the manner that they are conceived in reason, that is, they do not exist with the details left out, although they are conceived with this information left out.⁷ Nevertheless, the similarities are real.

THE ORIGIN OF ABSTRACT KNOWLEDGE

In his philosophy, Plato joins his account of the realm of Ideas to an account of how we come to know these Ideas. As we have already seen, these Ideas are not known with the senses, which know the physical world around us. Rather, they are known with reason. But how does reason come to know them? Plato claims that the soul once existed apart from the body and dwelt in the realm of Forms, at which time reason had firsthand knowledge of the Forms, much as the senses have firsthand knowledge of the world around us.

After this period of dwelling in the realm of Forms, the soul is joined to a body. At that moment, reason forgets all that it once knew in the realm of Forms. Our knowledge of the Forms, however, is not completely lost. As we perceive the world, the physical realities around us jog our memories and we recall what we once knew in the realm of Forms. When we see a beautiful object, for instance, we recall “Beauty itself.” For Plato, then, all knowledge is recollection.

Plato’s account of knowledge, it seems, is joined to a dualistic conception of the soul. The soul is a separate substance that exists apart from the body before we are ever born. Aristotle and Aquinas, with their hylomorphic view of the soul, reject this ac-

6. *ST*, I, q. 84, a. 5; I, q. 85, a.1.

7. *ST*, I, q. 85, a. 1, ad 2.

count of knowledge. How, then, do they account for our abstract knowledge?

For Plato, our knowledge of the universals precedes our sensible knowledge of concrete realities. For Aristotle, the opposite is the case. Sense knowledge must always precede our universal awareness.⁸ For Plato, we first know Beauty itself and then we sense individual beautiful objects. In a limited manner, the knowledge of Beauty itself follows upon the sense knowledge, but only insofar as the recollection of Beauty itself follows upon the sense knowledge. For Aristotle, the knowledge of Beauty itself follows without qualification upon our sense knowledge of individual beautiful things.

As a young child, Maria begins by sensing individual triangles. She retains these triangles in her imagination. With enough experience (to be discussed later), she forms what Aquinas calls a “phantasm,” which is the image of a triangle that collects together many triangles. Only at this stage can abstract knowledge begin. Reason abstracts (“drags out”) from the phantasm certain features, leaving behind individual details.⁹ Maria, for instance, forms the idea of a triangle as a three-sided figure. Only by knowing many individual instances—with her senses—can Maria drag out—with her reason—the similarities that exist among these individual instances.

INTELLECT

When Aquinas discusses reason’s abstract knowledge, he uses another word for this power. He describes it as the “intellect.” The word “reason” emphasizes another act of reason (to be discussed in the next chapter), while the word “intellect” refers

8. *ST*, I, q. 84, a. 6.

9. *ST*, I, q. 85, a. 1.

exclusively to the universal character of our knowledge. Thus it is a word that can be applied to other minds besides human, such as angelic minds, which also know in a universal manner.

According to Thomas, human beings have more than one intellect. They have two intellectual powers, one that he calls active (or agent) and the other that he calls passive or possible. The active intellect is that by which we actively abstract the similarities.¹⁰ In contrast, the possible intellect is that by which we know, in a more static way, the common attributes of things, abstracted from the concrete details that differentiate individuals; it is, more properly, the knowing power. According to Aquinas, we experience two separate actions. We are aware of our act of abstracting, of dragging out the similarities from the individual instances;¹¹ we are also aware of our own universal knowledge (which takes place in the possible intellect).

Why does abstraction require an active intellect? Because, as we have seen, an agent cannot give what it does not have. The fire can heat water only because it first of all has heat. The possible intellect itself does not give; rather, it receives. It is like the imagination, which receives the sensible impressions from the external senses. Likewise, the possible intellect receives the abstract concepts; it receives the natures of things apart from the concrete individual details.

From what does the possible intellect receive these concepts? Thomas says that it cannot receive these concepts from the imagination, for the imagination knows the concrete realities; it knows the features of things always with the concrete details.¹² In some manner, of course, the imagination plays a role, for we have seen that the imagination must form a phantasm and pres-

10. *ST*, I, q. 79, a. 3.

11. *ST*, I, q. 79, a. 4.

12. *ST*, I, q. 85, a. 1.

ent this phantasm to the intellect. Still, the imagination by itself is insufficient. It cannot give to the possible intellect the common features of things—such as having three sides—while leaving behind the concrete differences.¹³ The imagination simply presents an object that contains the similar features of things, from which the similarities can be dragged out; it does not present this object with the similarities already dragged out.¹⁴

From this object (presented by the imagination) something must drag out the common features while leaving behind the concrete details. That something is the agent intellect (or active intellect). The active intellect drags out the similarities from the phantasm so that the possible intellect can then receive these similarities. Our universal knowledge, then, demands both an active intellect and a passive intellect. As we have seen, it also demands imagination. Imagination does not itself know the abstract ideas, nor does it do the abstracting, but it is necessary to present an object from which the idea can be abstracted.

These two intellects are indeed two separate powers. The single word “intellect” that applies to both might mislead us into supposing that they are just two different aspects of one and the same power. Thomas insists that they must be separate. Otherwise, the possible intellect would already possess (in its active aspect) that which it comes to know.

RETURNING TO THE PHANTASM

Thomas claims that the imagination is necessary for our universal knowledge in another way as well. Imagination is initially necessary for the abstraction of some general idea. When we first become aware of a triangle as a three-sided figure, for instance,

13. *ST*, I, q. 84, a. 6; I, q. 85, a. 1, ad 3.

14. *ST*, I, q. 79, a. 4, ad 4.

imagination must present a phantasm from which the agent intellect abstracts. But even after we have abstracted some idea (and it is now present in the possible intellect), the imagination is still necessary in a second way. The possible intellect, says Aquinas, must always return to the phantasm of the imagination.¹⁵ Otherwise, the intellect might slip into distortion of the truth rather than simply leaving out information. Why? Because the intellect must know reality, and in reality the similarities exist in the concrete. It knows the features of things as common, then, but it knows that they exist somewhere as concrete, at least as they reside in the phantasm itself.

Universal knowledge, then, involves the following steps: (1) a person repeatedly has sense experience of some reality, such as a triangle; (2) in the imagination, he forms a phantasm, or collection of sense experiences; (3) with his agent intellect, the person abstracts the similarities and impresses these upon the passive intellect; (4) with his possible intellect he is aware of the similarities apart from the details, which (5) he recognizes in the phantasm of the imagination.

The phantasm itself can be referred back to some original sense impression. Anna can know three-sidedness, for instance, insofar as it resides in this triangle before her right now. On the other hand, the phantasm might not be referred to any further reality beyond itself. Then Anna knows three-sidedness as it resides simply in the phantasm, insofar as it *might* be realized in some concrete reality.

Given these two manners of returning to the phantasm, we can know the common features of things in two ways. First, we can know these common features insofar as they exist in reality; second, we can know them just in themselves, apart from any particular existence but insofar as they are able to exist in reality.

15. *ST*, I, q. 84, a. 7; I, q. 85, a. 1, ad 5; I, q. 85, a. 5, ad 2; I, q. 86, a. 1.

The first manner, however, can itself be divided. The natures of things can actually exist in two ways, either in the world around us or in our minds. The having-of-three-sides, for instance, can exist in a triangle on a piece of paper or it can exist in our minds in the act of knowing.

We can consider the natures of things, then, insofar as they exist in concrete realities, insofar as they exist in our minds—that is, in the possible intellect—and just in themselves—that is, apart from any particular existence, in the world or in our intellects, but merely as able to exist in either. These three manners of consideration parallel Plato's ways in which the Ideas can exist. They can exist by participation in the physical world (for example, in a beautiful painting) and also by participation in our mental ideas, but most properly they exist in the realm of Forms. Aquinas differs from Plato, however, because the third manner, for Aquinas, is simply a way of considering; it is not a way of existing.

Reason

All our knowledge begins with the senses, proceeds then to the understanding, and ends with reason. There is nothing higher than reason.

Immanuel Kant (*The Critique of Pure Reason*,
part 1, division 2, part 2A)

Happy is the one who is able to know the causes of things.

Virgil (*Georgics*, book 2)

As we have seen, the human mind is distinctive insofar as it understands in the universal—that is, with it we can understand common features of things apart from the concrete differences. This unique ability is not the only feature of the human mind by which it stands apart from animal consciousness. We say that human beings are *rational* animals; they are animals *with reason*. What is meant by “reasoning,” however, is often far from clear. We might get the impression that reasoning is nothing other than the ability to overcome difficulties, even as a mouse finds its way through a maze. This ability, however, is not distinctive of human beings, nor does it have a special claim to the name “reasoning.” Rather, if we are to speak precisely, reason is a

particular way of knowing. We must better understand reasoning if we are better to understand human beings.

According to Thomas, reason has three actions.¹ First, it can know the natures of things, which knowledge is called simple apprehension. Second, it can combine and divide. Finally, it can move from one idea to another, which process is most properly called reason. These three actions correspond roughly to three verbal signs. Simple apprehension corresponds to the use of single words, such as “dog” or “triangle.” Combining and dividing corresponds to the formation of sentences, which do indeed combine many individual words. Finally, reasoning corresponds to joining the multiple sentences with inferential signs (such as “because” or “therefore”) in what we call arguments.

COMBINING AND DIVIDING

We have already discussed the first act of reason extensively in the last chapter, although we will learn more about it as we come to understand how it relates to the other acts of reason. The second act of reason is best understood through the notion of predication, in which we say one thing of another. We say, for instance, “The bird is black.” We are saying one thing—“black” or “is black”—of another—“the bird.” We have a predicate that we attribute to some subject.² In this manner we are combining two simpler ideas, ideas that are first conceived through the act of simple apprehension. We combine the idea of black with the idea of bird, for instance, to form a new idea, in the form of the proposition, “The bird is black.”

The second act of reason involves not only combining but also “dividing.” Although the two sound like opposites, they share

1. *ST*, I, q. 85, a. 5.

2. *ST*, I, q. 16, a. 2.

much in common. In both, for instance, multiple simple apprehensions are related to one another. When we say, “The bird is not white,” we are relating the concept of “white” and the concept of “bird.” In this case, however, we are saying that the two are not joined in reality; rather, they are divided. In our minds, however, they are still joined into a single new idea called a proposition.³

Corresponding to propositions are the grammatical structures that we call declarative sentences. Recall that words refer to realities by way of ideas. Diverse ideas, then, are apt to have diverse verbal signs. For simple apprehension, we have the verbal sign of words. For propositions, we have the verbal sign of declarative sentences. In what follows, of course, we will have to refer to concepts by way of words and sentences.

Not just any combination of simple apprehensions makes for predication. Sometimes simple ideas are combined into further simple apprehensions, only more complicated simple apprehensions. We might say, for instance, “black bird.” This combines the idea of “black” and the idea of “bird,” but it does not predicate one of the other.⁴ Rather, it fuses them into a more complicated apprehension.

These unions of simple ideas—without predication—can get very complicated indeed. The concept “three-sided figure,” for instance, is still in the first act of reason and does not belong to combining and dividing, even though it unites the idea of “three,” the idea of “side,” and the idea of “figure.” The combinations can get more complicated yet, as in, “large red acute three-sided figure.”

Combinations of simple ideas, then, can be of two sorts. On the one hand, they can form into more complicated “simple” ideas. On the other hand, they can form into propositions by

3. *ST*, I, q. 58, a. 2.

4. *ST*, I, q. 17, a. 3.

way of predication. How do the two differ from one another? Not by some measure of complication. After all, “The bird is black,” is simpler than, “large black bird flying through the park.” Only the former, however, involves predication.

TRUTH

We can understand how predication differs from mere combination by considering its relationship to truth. Thomas teaches that truth is found most formally in the second act of reason, most particularly in propositions.⁵ If someone simply says “bird” or “black,” or even if he says “black bird,” then each of these utterances is neither true nor false. But if he says, “The bird is black,” then we have truth or falsity.

As we have seen, truth is a matter of conformity or agreement between what we have in mind and the reality. We saw that the senses are true, for instance, insofar as they correspond to reality.⁶ When Aquinas says that truth or falsity is found for the first time in the second act of reason, however, he means something more. After all, truth is found already in the senses, well before the second act of reason. And surely the concept “triangle” can correspond with realities outside the mind, so even this simple apprehension can be said to be true. Nevertheless, if out of the blue someone blurted “triangle,” we would never respond, “That is so true.” In contrast, if someone says, “Triangles have three sides,” we can indeed affirm that it is true.

In what way, then, is truth found first of all in the second act of reason? Only in the second act, says Thomas, is an actual comparison made between our ideas and the reality.⁷ The thought

5. *ST*, I, q. 16, a. 2.

6. *ST*, I, q. 16, a. 2; I, q. 17, a. 2.

7. *ST*, I, q. 16, a. 2.

“triangle” might well conform to some reality, but in the simple apprehension we pass no judgment on that conformity. In contrast, in the thought “triangles have three sides” we compare the thought to reality and judge conformity.

John Locke thinks that we first of all know ideas and then must argue out to reality. Aquinas maintains that we first of all know realities but can subsequently become aware of our own knowledge. This awareness of our own ideas becomes explicit for the first time in the act of combining and dividing. The first act of reason—simple apprehension—gazes steadfastly upon the content of the thought, not upon the thought itself; it focuses upon the bird in reality, not upon its own idea of a bird. The second act can look upon the reality *and* upon the thought, comparing the one to the other.

How can the second act look upon both the content of thought and upon the thought itself? First of all, reason is different from other knowing powers. We have noted, for instance, that we are aware of our external senses by way of an internal sense, that is, by way of the common sense. The external sense is not aware of itself. For reasons that will become clear later on, the intellect is different.⁸ It is aware of its own act. Aquinas says that reason, while knowing, bends back upon itself and knows that it knows.⁹

By itself, this observation does not answer our question. After all, simple apprehension is an act of reason, yet it does not explicitly compare thought to reality. What, then, is special about the second act of reason? The question is difficult, but we will attempt to make the answer as simple as possible.

The second act is special because it keeps separate what it unites. In some sense, subject and predicate are united; never-

8. SCG, bk. 2, c. 66, ¶5.

9. ST, I, q. 87, a. 3.

theless, they are still known as separate.¹⁰ Simple apprehension is different. When it combines, it fuses into a new concept in which the parts are not known separately. The simple apprehension “black bird” unites two simpler apprehensions in such a way that the two become melded. In the same way, if we imagine a black bird, or a red bird, or a mountain entirely of gold, we unite images into a union, in which they are known together and only together.

In contrast, when we predicate, “The bird is black,” we know “bird” as distinct from “black,” and we apply one to the other. We can know them as distinct because of the abstraction in simple apprehension. We can understand what it means to be a bird, abstracted from any particular color. We can understand what it means to be black, abstracted from being a bird, a cat, a dog, or any other substance. When we predicate “black” of “bird,” we keep the abstractions, but we apply one to the other.¹¹ We know that “bird” is not the same as “black,” and we know that “black” is not the same as “bird,” yet we recognize the one as applying to the other.

On the other hand, when we think “black bird,” we dissolve the individual abstractions and meld them into a new simple apprehension. We do not think of “black” as applying to “bird”; we think of an entirely new concept, namely, “black bird.”

In predication, says Thomas, reason recognizes that the reality it knows is one thing, while its manner of knowing is another.¹² The reality known is this black bird; the manner of knowing separates “bird” from “black.” We are thinking about the bird, and we are even thinking of it as black, but we recognize that our thinking of it as black is different from our thinking of it as

10. *ST*, I, q. 13, a. 12.

11. *ST*, I, q. 13, a. 12; I, q. 85, a. 5, ad 3.

12. *QDV*, q. 1, a. 3.

a bird. These two can be separated in our thoughts, but in reality they are together. This difference crystallizes for the mind the difference between the reality and the manner of knowing the reality. With this crystallization, a comparison is then made between the knowing and the reality. Truth in the fullest sense is now realized.

REASONING

Another important feature of reason is its ability to understand relations, that is, reason can consider two distinct realities and perceive a real connection between them. None of the senses, says Aquinas, understands relations; only reason does.¹³ This unique ability of reason follows upon the second act of reason, for when predicating, the mind relates one idea to another. It relates, for instance, “black” to “bird.”

One important relation that reason discovers is the causality that so vexed David Hume. If our minds were limited to the senses (external and internal), as Hume would have it, then we could never know causality, since the senses are unable to know relation, including the relation of causality. At most, we would learn to associate one idea with another. We might recognize a statistical correlation between two events, but we would not recognize a real connection of dependence between the two. When we perceive fire we might be led to think of smoke, but we would not recognize that smoke actually depends upon fire for its existence. Given the limitations that Hume placed upon the human mind, then, he correctly concluded that causality can be nothing other than this association.

The human mind, however, contains more than Hume imagined. Reason, unlike the senses, can do more than associate. It

13. *ST*, I, q. 16, a. 2; *SCG*, bk. 2, c. 66, ¶4.

can understand the relation between cause and effect, which is a certain relation of dependence.¹⁴ As a result, human beings engage in the scientific pursuit of knowledge; they try to understand the causes of things. Animals exhibit no curiosity to understand the causes of things, because—lacking reason—they have no notion of causality. If human beings knew only associations of ideas, as Hume supposed, then neither would they exhibit curiosity.

The grasp of relation also leads to another feature of reason essential to the scientific pursuit of knowledge. The mind, recognizing the relations between ideas, is led from one idea to another. The movement from one idea to another is called reasoning and is the third act of reason, from which the power derives its name. Consider a simple example. We come to recognize that whales belong to the category of mammals, and we also recognize that mammals have hair, so we conclude that whales have hair, which they indeed do have, at least initially when first born. By recognizing two relations, we are led to a third. First, we recognize how “whale” relates to “mammal”; second, we recognize how “mammal” relates to “having hair”; finally, we perceive how “whale” must relate to “having hair.”

The linking of one idea to another, and then to another, and then yet to another, and so on, is the work of enquiry of any sort, whether it be within physics, trying to discover the makeup of stars; within biology, trying to understand the genetic code; or within mathematics, trying to grasp imaginary numbers. Even in our day-to-day enterprises, we are continually linking ideas to reach new conclusions. When Krystyna sees smoke, she readily concludes that it probably arises from fire. Such basic reasoning is so automatic that we hardly recognize that we are engaging in it.

We use our understanding of causality, together with rea-

14. *In Meta*, bk. 6, lect. 1, ¶1146.

soning, in our daily pursuit of practical goals. When faced with a problem of achieving some goal, we might reason to the causes needed for a solution. If Brett wishes to build a shed, he reasons that he must get some wood, and then he reasons that he must drive to the hardware store.

One dramatic practical application of reason's understanding of causality is technology. Through knowing the causes of things, reason can construct useful tools to achieve desired goals. The mere association of ideas can provide a limited help in this regard. Birds associate twigs with a nest, and so they collect twigs. Chimpanzees can learn to associate sticks with crawling termites, so that they place a stick in a termite mound and then lick off the termites. These applications, however, are severely limited. With the understanding provided through causality, together with the connecting of one idea to another, reason designs new means to achieve desired goals.

We can see, then, that reason extends far beyond the senses. With reason, we understand relations; with reason, we understand the causes of things; with reason, we grasp the nature of truth; with reason, we understand the very nature of things. With reason, we grasp mathematics by extracting quantity from particular things, and even from our imaginations of quantities, and then perceiving the relations between quantities. Reason also allows the human mind to move beyond the mere physical and come to understand immateriality. We have discussed, for instance, the nonphysical characteristics of immanent actions; furthermore, dualism envisions an immaterial soul, and many religions speak of an immaterial God, as well as other immaterial beings, such as angels.

This new awareness is possible, in part, on account of another feature peculiar to reason: the ability to grasp negation. When we grasp "black" we also grasp its opposite, that is, what it means

not-to-be-black. Likewise, by negating the physical aspects of a thing, the idea of immateriality arises. Recall that when Sam puts his hand up to the fire and feels its heat, he takes on the heat in two ways. First, his hand becomes physically hot; second, in his awareness of the heat he takes on a mental likeness by way of an immanent activity. We came to understand the nature of such immanent acts by denying what applies to transient acts: the object does not change; the form does not come to be successively; and so on. By negation, then, we came to the idea of Sam taking on heat in a nonphysical way. By denying what applies to the physical, our minds have formed an incipient idea of the immaterial. When materiality is entirely negated—as we will see in the next chapter—then we come to form the notion of spiritual realities.

In a similar fashion, as we reason concerning causes in the world around us, we might come to recognize that some causes are nonphysical. We might discover something about the soul, for instance, indicating that it is nonphysical. Or we might discover that the cause of the physical universe cannot itself be physical. Reason, then, allows us to enter into the immaterial world.

On account of reason, then, human beings engage in scientific inquiry, make technological tools, do mathematics, and contemplate God. With all its accomplishments, we might well sit in awe of the human mind. It is indeed an astounding power. At the same time we must always recognize its limitations. Thomas himself says that with our minds we rarely get at the essences of substances. He suggests that even the essence of a fly escapes our inquiries. We know many attributes of flies, and we recognize that flies differ from other organisms, such as worms. Ultimately, however, we do not know the final distinguishing feature that separates them from other organisms, such as worms. This great human mind, then, still stumbles when confronted with the wonders in the world around us.

Human beings go beyond fashioning useful technology. We engage in representational art, such as painting and sculpting. Modern art theory, perhaps, claims that the work of art exists just for itself, with no need for representation, but prior to the twentieth century art was conceived as representational. It does not follow that art is a kind of photocopy. Of course, art can and does represent physical realities, but it also represents much more. It goes beyond the physical, drawing the mind to realities deeper than the senses.

Representation makes sense only with the power of reason, for representation involves a relation between the work of art and the reality it represents. If we perceive that a portrait is like the person portrayed, we are already perceiving a relation of likeness, which can be perceived only through reason. Consequently, we do not find art in the animal kingdom, for animals lack the notion of representation.

Indeed, the very first representation perceived by reason is in its own ideas. When the intellect recognizes truth—in the second act of reason—it recognizes that its own ideas conform to reality. This relation of conformity is then perceived as a relation of representation. And just as reason can take its knowledge of causality to create new causes in the form of technology, so also reason can take its knowledge of representation to create new representations in the form of art.

REASON AND ANIMALS

We have been speaking as if reason is found in human beings alone, as if animals have only the external and internal senses with no power of reasoning. Not everyone, of course, would agree. Some claim that human beings have a greater share of reason than other animals but that nevertheless other animals do

have reason; they simply have a very rudimentary form of reason. After all, animals do amazing things. We have already mentioned that chimpanzees use sticks to draw out termites, which they then eat. In addition, chimpanzees have been observed to pile boxes in order to reach a banana placed beyond their reach. Dogs sometimes get their owners' walking sticks when they themselves want a walk, and dogs have also fetched help for people in danger. Rats find their way through complicated mazes. Squirrels emit chirping noises to warn other squirrels of predators. The list goes on. These behaviors, so the argument goes, exhibit a rudimentary form of reasoning.

Even a casual survey of human behavior, however, reveals astonishing differences between human beings and animals. As pointed out above, human beings engage in scientific inquiry, do mathematics, make tools, create representational art, worship gods, and speak languages. Do we really want to say that this behavior is merely a difference of degree? Are the squirrel warning chirps a form of language, just more rudimentary than English or Japanese? Is the chimpanzee's use of a stick a rudimentary form of toolmaking?

Recognizing human uniqueness in no way calls into question the astounding cognitive abilities of animals. Bowerbirds build ornate nests, decorated with colorful objects. Beavers, as well, build elaborate structures, and spiders construct intricate webs. Ants have been known to cultivate fungus, and some ants "enslave" other ants. Elephants are well known for pausing over their dead. Social animals such as wolves will return favors and "punish" those who do not return favors. These various behaviors indicate a strong and active estimative power as well as keen memories. Although these behaviors do not require reasoning, they sometimes mimic reasoning. A beaver's architectural ability looks something like the human ability to build cathedrals and skyscrapers. The

beaver, however, sticks to a set pattern; in contrast, the human architect diversifies according to individual reasoning.

In the animal kingdom we find a wide spectrum of cognitive abilities, from the lowest to the highest. Animals like worms have limited external senses, and, although they may retain some sensations in imagination, they seem to have little further awareness. Higher animals, such as fish or reptiles, often have the whole range of external and internal senses. Nevertheless, their memories are not as versatile as those of other animals, such as mammals. Within higher classes, such as mammals or birds, a range of cognitive abilities is also evident. These differences of cognitive abilities seem to reside largely in the estimative power and memory, for which different animals have greater or lesser capacities. The animals with the greatest cognitive abilities even seem to exhibit some kind of ability to rank options and perhaps the ability to recognize themselves as bodies distinct from other similar bodies. Only human beings, however, recognize themselves as having minds. Only human beings have self-consciousness in the fullest sense. With our minds we are aware not only of the world; we are aware not only of our own bodies; we are aware of ourselves as conscious beings.

Animals do seem to recognize similarities. In order to get food, for instance, a bird can be trained to peck the image of a triangle—of any color or any size—rather than a square or a circle. The bird, then, seems to be pulling out the similarities apart from the differences. It separates three-sidedness from a square or a circle, and it separates three-sidedness from color or size. In this manner, animals can be trained to recognize a wide variety of rather complex similarities. If the ability to recognize similarities (apart from the differences) is an ability of reason, then it seems that animals have some rudimentary form of reason.

Being able to pick out similar objects, however, is not the

same as understanding similarities apart from differences. Human beings understand similarities; animals are merely able to pick out similar objects. How do these two acts differ? The ability to pick out similar objects is always linked to behavior; as such, it is always linked to something desirable or undesirable. Pecking the image of the triangle, for instance, is linked to getting food. What the animal requires, then, is an association between an image (a triangle) and something good or bad.

Human beings also experience such associations, as is perhaps especially evident with the emotion of fear. If Clare has been frightened by spiders, for instance, then she quickly begins to associate the image of a spider with danger, giving rise to the emotion of fear. These associations require no understanding. Given a certain image, a certain emotion arises.

It is easy to anthropomorphize when observing animal behavior. If we were placed in a room in which food appeared whenever we pushed buttons with triangles on them, then in our mental lives, we would have much more than an image and a response. We would fill in many gaps, recognizing, for instance, that the diverse buttons that bring food all have images with three sides. We would also conclude to a causal connection between pushing the button and getting the food.

The mental life of the bird does not fill in the gaps. It sees an image and has a certain response. The image of a triangle triggers the response of pecking. Indeed, it likely triggers an internal response; for instance, it might trigger a memory of previously pecking an image and getting food. Does it follow that the bird recognizes that the current image is similar to the past image? Not at all. Rather, one image calls to mind another, with no understanding of how or why the first prompted the second.

We often experience the same phenomenon. When we see a picture of someone, the memory of a time we have seen him

before might quickly come to mind (perhaps even if we have seen him only once before). We do not necessarily know the features by which we recognize him. Indeed, even when we recognize our good friends, we might be hard-pressed to pick out many of the features that trigger our recognition. Of course, we can step back and reflect on the matter, perhaps identifying various similar features between a current photograph and the memory that comes to mind. It does not follow that animals have the same capacity to step back and reflect. They simply have the capacity by which one experience can trigger the memory of another.

We now know that the link between a similar input and a similar output can be achieved, in computers, by neural networks, which mimic certain structures in the brain. Consider, for instance, the manner in which Dan's dog Abby might be able to recognize Dan through a neural network in her brain. For the sake of simplicity, suppose that Abby has an input for the distance between the eyes on a face; then suppose that the distance between Dan's eyes is 2.9 cm. When Abby sees a face with eyes 2.9 cm apart, she has a strong impulse toward enjoyment or pleasure. When the eyes are 2.8 cm or 3.0 cm apart, she has a slightly weaker impulse toward enjoyment or pleasure. In this manner, Abby is "recognizing" faces that are similar to Dan's. More accurately, the closer an input approaches a 2.9 cm distance, the more likely Abby will have the response of enjoyment.

With this primitive system, no doubt, Abby will respond indiscriminately to many faces that are quite different from Dan's. Abby's neural network could be made more discriminating if we added another input, such as the length of the nose. If the length of Dan's nose is 4.8 cm, then Abby will have a strong response of pleasure for noses of this length, a slightly weaker response for noses that are 4.7 cm or 4.9 cm long, and so on. Given these specifications, Abby will have the strongest response of enjoyment

for faces that have eyes 2.9 cm apart and a nose that is 4.9 cm long, but she will have a slightly weaker response for faces that approach these parameters. The added layer (of nose length) has improved Abby's ability to respond to faces that are similar to Dan's. If the input of the length of the lips is added, then Abby will become more discerning yet.

This example of a neural network is a gross oversimplification, even a caricature. For one thing, any face-recognition neural network would need far more than three coordinates. More importantly, Abby has no input for distance between eyes or for nose length. Rather, she has the input of the various points on Dan's face, something like a pixel grid. From this pixel input, what aspects does a neural network pick out? We do not really know. Similarly, when we recognize the faces of our friends, we often cannot identify many of the features we use to make distinctions. What is it about Dan's nose that helps us to recognize him? In order to recognize him, we need not be able to answer this question.

When a bird sees a three-sided figure, it may then peck at the image, hoping to get food. Does the bird have an idea of a three-sided figure? There is no reason to suppose so. Rather, its neurons are configured such that images with three sides trigger neural firing within a certain range on a coordinate system. When these neurons fire, certain response neurons (leading to pecking) are more likely to fire. The bird is able to respond to figures with three sides, even recalling past instances of seeing this figure and getting food. Nevertheless, the bird has no idea of a three-sided figure. While it can respond to similar cases, it cannot step back, as we can, and recognize what is similar between all of these cases.

With repeated experience, then, animals sort perceptions based upon those perceptions' associations with various behav-

iors. They have no idea of the common features of things abstracted from concrete differences. Rather, certain experiences come to be associated with certain behaviors. Association is a powerful force that allows animals to perform many amazing feats. Association, however, is not reason—not even a reduced share in reason—although it can mimic reason. It provides for appropriate responses to various situations, but it lacks understanding of the situation and of the causal forces at work.

Solemn pronouncements that animals exhibit reason should be scrutinized with care, as we will see when we examine claims concerning language use in animals. These pronouncements are often part and parcel of the reductionist project discussed in chapter 6. If everything can be reduced to the behavior of its parts, then necessarily human powers will differ from animal powers only by degree. No new power will be present in human beings. As we have seen, reductionism must deny that awareness is anything new; it is just a refined form of chemical activity. Likewise, human behavior is just a refined form of animal behavior. It is nothing fundamentally new. Beethoven's Ninth Symphony, Notre Dame Cathedral in Paris, and the Apollo rocket may lead us to approach such claims with skepticism.

Our discussion of animal responses to similar situations may help answer a problem raised in chapter 9. Recall that the imagination must present to the intellect what Aquinas calls a phantasm, which somehow collects together many sense experiences. Thomas never provides the details of how this collection occurs. Plausibly, it occurs through the same sorting by which animals pick out similar objects.

TALKING APES

Perhaps the most sustained effort to discover reasoning in animals is found in experiments attempting to teach language to animals, especially to chimpanzees and other primates. Since primates lack vocal ability to form audible language, some researchers have tried to teach chimpanzees American Sign Language. Other experimenters have created languages of their own involving plastic chips or symbols on computer screens. The researchers have claimed varying degrees of success. The animals have learned, so it is claimed, to use a wide vocabulary, somewhere between 200 and 300 words. They have learned word order or other forms of grammatical usage. They have coined new terms, such as “water bird” for a swan or “dirty monkey” for an undesirable cell mate.

Most of these claims were silenced by the psychologist Herbert Terrace and the linguist Thomas Sebeok.¹⁵ Terrace attempted to teach American Sign Language to a chimpanzee (whimsically named Nim Chimpsky, after the renowned linguist Noam Chomsky, who claims that language is peculiar to human beings). At first, Terrace thought that he had succeeded, but a review of his data convinced him that Nim was doing something else besides using language.

Sebeok showed that a review of the data of all the experiments revealed that the behavior of the animals could be explained without supposing that they are using language. Sebeok’s approach emphasizes that we observe external behaviors, such as the movement of hands or the placing of chips upon a board or

15. See H. S. Terrace, *How Nim Chimpsky Changed My Mind* (New York: Ziff-Davis Pub. Co., 1979); and Thomas A. Sebeok and Donna Jean Umiker-Sebeok, *Speaking of Apes: A Critical Anthology of Two-Way Communication with Man* (New York: Plenum Press, 1980).

the touching of a keyboard. This external behavior must be interpreted. Some researchers have chosen to interpret the external behavior as the use of language. Is this interpretation a plausible reading of the data? Sebeok thinks otherwise.

Terrace, as well, was aware of the divide between observed behavior and theories attempting to explain this behavior. He criticized earlier experiments because they had not collected sufficient data to prove the use of language. In his own experiments, he hoped to show, by more careful recording of data, that his chimpanzee must be using language.

No doubt the behavior of the animals looks something like language, but language is more than the conveying of information. It involves the intent to convey information by way of representation. In the presence of a banana, for instance, a chimpanzee might move his hands in something of the manner of the American Sign Language symbol for a banana. Indeed, chimpanzees might make the appropriate symbols—or something like them—for one hundred or two hundred words.

What looks like language, however, is not necessarily language. Setting aside the question whether the researchers simply saw what they wanted to see (since deaf experts in American Sign Language, when they observed the chimpanzees, often saw no use of American Sign Language or saw different signs than were recorded by the researchers), the ability to produce single-word responses is nothing surprising. Indeed, it is no more than the tricks that circus animals perform. Given a certain cue, a dog might leap through a hoop, or perhaps several hoops. Likewise, given a certain cue (the presence of a banana), a chimpanzee might move his hands in certain ways. Is the dog using language, or does it simply have a good memory to associate the cue with a certain behavior and the behavior with a certain reward? No responsible researcher would claim that the dog has any-

thing more than a good memory. Yet some researchers wish to claim that the chimpanzees have something more than a good memory.

HERBERT TERRACE AND NIM CHIMPSKY

Single-word usage, insists Herbert Terrace, is insufficient to posit anything more than a good memory. It reveals only the ability to perform circus tricks. It reveals no ability beyond the natural “languages” used by animals in the wild, such as the chirping of squirrels in the presence of predators.

This behavior is no mystery and has nothing to do with language. Given the stimuli of certain sounds (or certain images, or certain odors, and so on), animals exhibit various responses, some instinctive and some conditioned. To the sound of a dog growling, for instance, a cat might respond with the emotion of fear. Likewise, to the odor of a cat, a mouse might respond with the emotion of fear. Given the emotion of fear, the animals exhibit certain behaviors, such as running or hiding.

The same happens with the squirrels. In the presence of a predator, they have a natural response, such as fear. One of the behaviors that follows upon fear is a certain kind of chirping, even as human beings sometimes scream in response to fear. These two—the chirp and the scream—might appear different: the chirp is an attempt to communicate while the scream is just a visceral response. In fact, the evidence indicates that the two are fundamentally the same. Indeed, the scream might be more of an attempt to communicate than the chirp, which is simply an emotional reaction. Other squirrels who hear the chirping also have a natural response, such as the emotion of fear, just as human beings respond to a scream with fear of their own. Is this the use of language? Rather, it is nothing more than instinctive

or memorized responses. The chirping of various animals might get somewhat complicated. It might vary, for instance, based upon the size of the predator or the proximity of the predator. Such variations do not create language. They merely exhibit a more subtle stimulus response reaction.

What, then, is needed for language? Herbert Terrace emphasized grammatical usage. We have evidence for language, he said, only if the animals consistently form sentences according to correct grammatical rules. In effect, Terrace seems to have been emphasizing the second act of the reason (associated with sentences) rather than the first act of reason (associated with single-word usage).

From what we have seen, this emphasis is well placed. Only with the second act of reason do we come to understand the idea of one thing referring to another. From this understanding follows representational art. Not surprisingly, this understanding also underlies the representations of language. If human beings can form images as representations of other things, then they can also form sounds (or shapes upon paper) as representations of other things. Language, then, presupposes the second act of reason. As such, it is best realized in the formation of sentences.

Unfortunately, most of the researchers who claimed that their chimpanzees (or other primates) were using language did little to identify exactly what language is. It is not, we have seen, simply the response of some behavior given a certain stimulus. Nor is it simply the conveying of information. The squirrels happen to convey information, but they are not using language. Likewise, the bright colors of flowers convey information to bees, but the flowers are not using language. Nor is the inexperienced poker player using language when his facial expressions reveal that he thinks he has a good hand (although we do speak of "body language," which is to use the word in an extended way).

And while we sometimes speak of the “language of DNA,” the chemical structures of DNA are not in fact using language, no matter the “information” they relay.

Recall that language involves the intent to convey information *by way of representation*. Thus, it demands an understanding of one thing referring to another. This understanding, we have suggested, comes only with the second act of reason. The researchers, then, are correct to this extent: if we can find evidence of language usage in animals, then we have also found evidence of reason in animals. But have we, in fact, found evidence of language usage in animals?

Single-word usage, Terrace argues, is evidence only of a good memory. Sometimes even correct grammatical usage, he claims, can arise simply from a good memory. In some experiments, for instance, the chimpanzee was trained to get word order correct (word order being the primary grammatical rule—as with English—in the languages in the experiments) by the giving of rewards when the word order was correct. The chimpanzee would get the banana, for instance, only if she put down the chips corresponding to “give,” “banana,” and “me,” and only if she put them down in that order. If she put down “banana me give,” she would get no reward.

Such training in word order, suggests Terrace, is nothing other than training a circus animal to do a series of tricks—in a certain order—following upon a given cue. When the whistle blows, the dog jumps through the hoop, climbs up the ladder, slips down the slide, pulls a string that opens a door, and enters the door. The dog gets the reward only if it performs all of these tricks and only if it performs them precisely in that order. Has it used language? Or does it simply have a good memory? Indeed, memorization of the sequence may not take a spectacular memory. Even a pigeon—far from the smartest animal—can be trained

to push buttons in a certain sequence in order to get a reward. Is the pigeon using language when it pushes first the red button, then the green, then the blue, and finally the yellow?

How are we to distinguish between correct "grammar" performed out of rote memorization and correct grammar that is true language usage? For one thing, suggests Terrace, we can avoid training animals through rote memorization. We can simply use language in their presence and see whether they pick it up. For another thing, we can see whether they use correct grammatical rules in a wide variety of contexts that would seem to defy rote memorization. Such was the project that Terrace undertook with Nim Chimpsky. He did not train Nim by offering rewards for rote memorization. Furthermore, he recorded data in a wide variety of contexts.

As mentioned earlier, at first Terrace thought he had succeeded at teaching Nim Chimpsky language. Nim Chimpsky, who had not been taught through rote memorization, exhibited correct grammatical usage in a wide variety of contexts. Subsequent analysis of the data, however, revealed that Nim Chimpsky was up to something else besides language usage or rote memorization. Ultimately, he was imitating. Review of the videotapes of Nim showed that when his trainer gave a series of American Sign Language symbols, Nim would typically respond with a similar series. Since the trainer used correct grammar, then so did Nim.

What was Nim up to? Terrace found the answer in comparisons between Nim and young children. Terrace was concerned with combinations of words rather than single-word usage; in particular, he was concerned with combinations and correct grammatical order. What do we find with children who are learning to speak? We find that once they begin making combinations, they continue to do so and they increase the length of their combinations dramatically. They quickly move from two-

word combinations up to three- and four-word combinations, and from there to ten-, twenty-, and thirty-word combinations. What of grammar? They rarely make grammatical errors (to the point of following the rules when there are exceptions).

What do we find with Nim Chimpsky as he was learning “language”? Once he began making combinations, he did not increase the length of his combinations. His combinations remained at an average of one and a half words. Of course, that average included some rather lengthy combinations. Unlike with children, however, the length of the combination often did not add new information. Consider his longest combination of sixteen words: “give orange me give eat orange me eat orange give me eat orange give me you.” He might have expressed the same idea with the three-word combination, “Give me orange.”

What of grammar? Nim Chimpsky was pretty good at grammatically correct word order, averaging about 80 percent. That high percentage, however, depended not upon understanding of sentences but upon imitation. While children imitate less and less as they learn more of the language, Nim did the opposite. With time, he got better and better at imitation. After first learning to speak, children quickly begin to initiate conversations themselves, and they expand upon what is said to them. In contrast, Nim almost never initiated, and he expanded upon what was said to him only 10 percent of the time.

Terrace concluded that Nim Chimpsky had learned to play a game, but it was not the language game. Rather, Nim had learned to move his hands in a way that would please his teachers and give him rewards. The best way to achieve this goal was by imitating his teachers’ behavior.

ORIGINAL USAGE OF WORDS

Terrace was unimpressed with the examples, given by some experimenters, of the original usage of words. To someone inexperienced with animals that have been trained in “language,” the examples appear impressive, but Terrace found that his experience with Nim revealed that the chimpanzees’ behavior could easily be explained without the suggestion that chimpanzees are using language.

When the chimpanzee signed “water bird” in the presence of a swan, she was doing merely what she had been trained to do. In response to a certain movement of her trainer’s hand (a movement that means—to human beings—“What is that?”), the chimpanzee had been trained to look at the objects around her and then move her hands in ways that she had learned to associate with those objects. While on a boat, she looked around and found a bird and lots of water. She then moved her hands according to her associations. Was she giving a new name to the swan? On the contrary, she was not even giving the name “bird” to the swan. She was only moving her hands in a way that she had learned to do in the presence of birds, even as a dog learns to perform certain tricks in response to certain sounds.

“Dirty monkey” can be similarly explained. Terrace taught Nim to sign “dirty” to indicate that he had to go to the bathroom. Quickly, Nim began to use the sign “dirty” to get out of uncomfortable situations, although he did not have to go to the bathroom. He knew that he would be removed from the uncomfortable situation and taken to the bathroom. So if a chimpanzee is in the presence of an undesirable monkey, it might well sign “dirty” because it is uncomfortable and also “monkey” because it is in the presence of a monkey. Again, no new use of “language” is required.

The supposed “language” of the chimpanzees, then, can be explained without recourse to true language. Perhaps they have simply memorized certain responses from the presence of certain objects in the room. Perhaps they have simply become good at imitation.

THOMAS SEBEOK AND CLEVER HANS

Thomas Sebeok offers a third possibility. Perhaps they have learned to respond to subtle cues that give away the “correct answer.” Sebeok refers to Clever Hans, a horse that learned to do arithmetic, tell time, and answer questions. Such, at any rate, was the initial conclusion of scientists. If you asked Clever Hans, “What is two times three?” he would respond by stomping his foot six times. Further investigation, however, revealed that Clever Hans was not doing arithmetic. He was observing muscular tension in the questioner, thereby picking up cues concerning the correct answer. Questioners with intense personalities would count the number of stomps to see whether Hans got the answer correct. As they counted, their bodies tensed up, but as Hans approached the correct answer they began to relax, and when he had reached the correct answer they relaxed completely. Hans had been trained (unintentionally) to stop stomping when the person in front of him relaxed; only then would he get a reward. He was very clever indeed, but not at all clever at arithmetic.

This picking up of subtle cues has come to be called the “Clever Hans effect.” It underlies the need for double-blind testing in scientific experiments. If the experimenters know the “right answer,” they often give subtle cues to the subjects in the experiment, who then react based upon these cues.

Likewise, thinks Sebeok, chimpanzees are good at picking up subtle cues, perhaps cues of which human beings are complete-

ly unaware, such as body odor. In one test upon chimpanzees, in which the questioner did not know the language used by the chimpanzees, the chimpanzees no longer got word order correct. Rather, they began shuffling the words around, evidently looking—but not receiving—a cue for the “right answer.”

Sebeok also thinks the experimenters see what they want to see. They desperately want to believe that their chimpanzees can use language, so they interpret everything as success, and rarely do they look for alternate explanations. In fact, however, the alternate explanations are numerous: from memorizing, to imitating, to picking up cues, and to many other things besides. According to Sebeok, we have no good reason to think that these chimpanzees are really using language. We might as well believe that Clever Hans was a mathematical whiz.

We do have good reason, however, to believe that human beings have a special power not found in animals. What is that power? The power to abstract, that is, the power to know similarities within reality, leaving behind the differences; the power to predicate, that is, the power to combine the similarities while yet recognizing they are separate; the power to compare our knowledge to the objects we know; and the power to infer, that is, the power to recognize the relation between ideas, so that we can move from one idea to another. In short, human beings have the power of reason. Human beings are not merely clever animals. We hold within ourselves a nobility that elevates us above the material universe. As Aristotle reminds us, we do well to develop this divine element within us.¹⁶

16. *EN*, bk. 10, c. 7, 1177a16.

Immortality

One short sleep past, we wake eternally
And death shall be no more; Death, thou shalt die.

John Donne

Animals sense the physical bodies around them, and they can recall these objects in their imaginations and memories. Without reason, however, they have no conception of anything beyond the physical. In contrast, the human mind rises above the physical. Reason is a special power, unique to human beings, by which we are able to understand the immaterial world around us.

This ability has led to the conception of the human soul as an immaterial or spiritual reality. Mention of the soul often calls to mind images of an afterlife—heaven or hell or some such state—or it might give rise to thoughts of reincarnation, that is, a soul entering a new body and beginning a new life. Such ideas depend upon the notion that the soul is immortal, or at least that it has a durability extending long beyond the present life. This notion of immortality is widespread. Indeed, the belief that the soul continues after death may be found in every human society.

DIFFERENT VIEWS ON IMMORTALITY

But do we have good reason to believe that the soul is immortal? That depends upon what the soul is. If dualism is true, then the soul is a separate immaterial substance responsible for our conscious awareness. Such a soul might well be immortal. After all, it has no material constituents that can be broken up. On the other hand, if materialism is true, then the soul is simply the organization of the body. This organization is certainly not immortal. Rather, it ceases to be at death. According to materialism, then, the soul is not immortal, and there is no next life beyond the present life.

Hylomorphism, it seems, should reach the same conclusion as materialism. According to hylomorphism, the soul is the substantial form of a living body. We should expect this substantial form to cease to be at death. After all, it is itself not a thing or substance; rather, it is an element of a substance.

When change occurs, the subject remains through the change. When cold water becomes hot, water is at the beginning and at the end of the change. On the other hand, the privation ceases to be. The water is no longer cool but is now hot. If the privation continued through the change, then no change would occur. The state of the water would be the same at the beginning and at the end.

When substantial change occurs, first subject or prime matter remains through the change. The substantial form, however, cannot remain through the change. If it did, no substantial change would occur. If the substantial form of a dog existed before the change of death and after the change of death, then the change would not be a substantial change. The dead dog would still be substantially canine, for it would have the substantial form of a dog. If death is truly a substantial change, then the

substantial form cannot remain through the change. Since the substantial form of a living thing is the soul, it follows that the soul cannot remain through the change. According to hylomorphism, then, it seems that the soul ceases to be at death and is not immortal. Why—or even how—would a substantial form continue to exist when the substance itself has ceased to exist?

IS A RATIONAL SOUL DIFFERENT?

Despite this seemingly straightforward conclusion of hylomorphism, Aquinas maintains that the human soul is different from other souls. It continues to be after death; indeed, it never ceases to be. Recall that hylomorphism allows for different kinds of souls. An oak tree has one kind of soul, a squirrel another kind of soul, and a human being has yet another kind of soul. When there is a different kind of substance, then also there must be a different kind of substantial form. Since an oak tree is substantially different from a squirrel, and a squirrel is different from a human being, each must have a different kind of substantial form, that is, each must have a different kind of soul.

How do we know that these three things are different in substance? Through their powers. Squirrels have powers not found in oak trees, such as the power to see or the power to remember. Similarly, human beings have the power of reason, which is not found in squirrels.

How do we come to recognize these different powers? Through different activities. We observe squirrels, trees, and human beings. We examine their behaviors to determine what kinds of powers they have. Of course, we do the same for chemicals or elements. We discover that many metals have the power to bend (without fragmenting) because we observe the activity of bending. For human beings, we rely upon our direct access to our own internal

states of awareness. We come to recognize, for instance, that we have the power to see, to remember, and to reason, by observing these activities within ourselves. Typically, we observe them together with the external behavior that accompanies them. Consequently, we are able to transfer our observations to animals, who exhibit similar external behavior and have similar bodily make-up. We know that squirrels see while door mechanisms do not, because we know that door mechanisms are merely complex arrangements, which can never give rise to a new kind of activity.

We know that we have distinct activities because we recognize the objects of the activities. The object of the act of heating is the endpoint of heat, and the object of the act of building is the endpoint of a structure. Similarly, the object of the act of growing is increased size, and the object of the act of reproducing is a new member of the species. Again, the object of the act of seeing is color while the object of the act of hearing is sound. Yet again, the object of the act of reasoning is the similarities found in diverse things, even as the three sides of a triangle can be known apart from the particular details that differ among various triangles.

In each case, we recognize a new activity through the object of the activity. Having recognized the new activity, we recognize the need for a new power. And having recognized the new power, we recognize a new substance. For each distinct substance, there must be a distinct substantial form. For each different kind of living thing, then, there must be a different kind of soul.

We have every reason to believe that souls cease to be at death, but perhaps the human soul is different. Perhaps its distinctive power—the power of reason—gives it a life of its own, by which it continues to exist even after death. Such is the thought of Aquinas.

Although in every society we find the recognition that human beings have an immortal soul, Thomas thought the matter

far from obvious. Indeed, the immortality of the human soul is a question of the most elevated realm, to be addressed only by those well-experienced in philosophy. Even they may find the matter too difficult to comprehend. In short, the immortality of the human soul is not the sort of question that we should address in a book like this. Nevertheless, we will venture into challenging terrain. We will offer at least an outline of the argument by which Aquinas concludes that the human soul is immortal.

THE GENERAL STRUCTURE OF THE ARGUMENT

The argument has the following general structure. Human beings have an immaterial activity, which thereby requires an immaterial power. The immaterial activity is reasoning, and the immaterial power is reason. When Thomas says that reason is an immaterial power, he means that it does not have any bodily organ. The power of sight has the eye for an organ (and perhaps part of the brain), and the power of imagination has portions of the brain as its organ. Each mental power, it seems, has a bodily organ.¹ Reason, claims Aquinas, is an exception. It has no organ.²

If reason has no organ, then it cannot reside in the whole substance, for a human being is a bodily substance. Rather, reason must reside in some immaterial substrate. Since the soul is responsible for our powers, Thomas identifies that substrate with the human soul.³ In short, other powers reside in the whole substance—the whole human being—and the whole human being is bodily. In contrast, reason resides in the soul alone.

In order for the soul to be the subject in which the power of reason resides, it must have its own existence, for activity follows

1. *ST*, I, q. 84, a. 6.

2. *ST*, I, q. 75, a. 2; I, q. 77, a. 5.

3. *ST*, I, q. 75, a. 2.

upon an existing subject.⁴ Since the human soul is the substantial form of the whole human being, Thomas concludes that the human person exists by way of the existence of his soul. The human being does not have two separate acts of existence, one for his soul and one for his substance. He has a single existence, for he is a single being, but this single existence comes from the soul, which is the subject of a distinct power, namely, reason.

One further step is needed to reach the immortality of the soul. Aquinas asks whether the existence of the soul can ever be taken from it. He notes that things can cease to be in two ways. On the one hand, some things receive their existence from the subject in which they reside, so that they also lose their existence when that subject ceases to be. If a dog ceases to be, then so does its power of sight, which exists only insofar as it resides within the dog. Likewise, the soul of the dog ceases to be when the dog ceases to be, because its soul exists by way of being part of the whole. On the other hand, some things have existence by themselves, so they can lose existence only when they themselves are broken up. In this manner, the whole dog ceases to be, because its constituent elements of matter and form are broken up.

The human soul, says Thomas, can lose its existence in neither way. It is not a substance composed of matter and form, so it cannot lose existence by being broken up. On the other hand, it does not receive its existence from its subject, as the dog's power to see receives its existence from the dog. The soul does not exist by residing in anything; rather, it has its own existence, independent from a subject in which it resides. It follows that the soul will not lose its existence simply because something else—the whole human being—ceases to be. Once the human soul exists, therefore, it must always exist.⁵

4. *ST*, I, q. 75, a. 6.

5. *ST*, I, q. 75, a. 6

NONPHYSICAL ACTIVITIES

Such, in brief, is the argument, each step of which might well be contested. We will focus upon the earlier steps. First, what does it mean to say that reasoning is an immaterial activity? When we first examined immanent activities, we noted that these activities are nonphysical. In these activities, the agent takes on a likeness but not in a physical manner. When Sam senses heat, he takes on heat, but his feeling heat is not the same as physically becoming hot. Rather, it involves taking on heat in a nonphysical manner. In some manner, then, all immanent activities are nonphysical.

They are not all nonphysical to the same degree, however, or in the same manner. The activity of seeing, for instance, is nonphysical with regard to colors. It takes on colors (but not sounds) in a nonphysical way. On the other hand, the activity of imagining is nonphysical in both ways. It takes on both colors and sounds—and textures and temperatures and odors and flavors—in a nonphysical way. The activity of imagining, however, is still limited in its nonphysical character. It does not, for instance, take on the likeness of substances in a nonphysical way. Even many properties—such as relations—are not known by imagination, so imagination does not take on these properties in a nonphysical way.

Reasoning differs from all of these immanent activities because it is nonphysical in every respect.⁶ It can take on the likeness of any material object and any material property. With the first act of reason—that is, simple apprehension—we can understand colors, sounds, trees, dogs, relations, electromagnetic fields, and so on. The act of reasoning, then, is nonphysical with regard to all material objects. In short, it is entirely nonphysical.

6. *ST*, I, q. 75, a. 2.

To such an entirely nonphysical action, we can give the name “immaterial.”

Previously, we noted that reason has the capacity to bend back upon itself and know its own act of knowing. This unique capacity follows upon the immaterial character of its own act. We know objects by taking on their likeness in a nonphysical way. When it comes to the act of reason itself, however, no physical aspect remains. It may be known, then, precisely as it is, without becoming in some manner further removed from matter. The very act in which reason knows, then, is itself an immediate object of knowledge.

REASON HAS NO BODILY ORGAN

What does it mean, then, to say that the *power* of reason is immaterial? Recall an important difference between dualism and hylomorphism. According to dualism, the soul is an immaterial substance and it is responsible for immanent activities, such as sensing, imagining, and remembering. For some mysterious reason, however, these activities are also tied to a body. In contrast, hylomorphism claims that it is the whole organism that senses, imagines, and remembers, even if it is the soul that is primarily responsible for giving the organism these powers.⁷ Not surprisingly, then, organs are involved in the activities of the senses, whether external or internal. All senses have a bodily organ, because a bodily substance is doing the sensing. When we say, however, that reason is an immaterial power, we indicate that reason is different from the senses. While the senses have bodily organs, reason does not.

To a limited extent, then, dualism and hylomorphism come together with regard to the power of reason. The power of reason

7. *ST*, I, q. 75, a. 4; I, q. 75, a. 4, ad 1.

cannot reside in the body, but it must reside somewhere. Ultimately, then, it must reside immediately in the soul. The soul reasons by itself, with no organ. With regard to the senses, dualism claims that the soul is aware (although the body is in some way necessary). In contrast, hylomorphism claims that the whole bodily organism is aware. With regard to reason, however, the two agree: the soul reasons and not the body. In short, the power of reason has no bodily organ.⁸

Regarding this claim of the immateriality of the power of reason, we must do two things. First, we must show why Aquinas thinks that reason is an immaterial power. Second, we must address the difficulty of the brain, for it may seem that we reason with our brains. In short, it may seem that we reason with a bodily organ. Modern science might seem to prove that Aquinas is wrong, because without our brains we cannot reason.

Let us consider the first point. Why did Aquinas think that reason is an immaterial power? Aquinas's argument is cryptic. Consequently, what is presented below is simply one possible interpretation of what he says.

As indicated above, all immanent activities are nonphysical with regard to the object known; consequently, the act of reason must be entirely nonphysical, since reason has for its object all material beings. Does it follow that the *power* of reason must also be entirely nonphysical? Thomas thinks so.⁹ He claims that a knowing power cannot have physically that which it knows. Since the power of sight knows colors, it cannot itself be physically colored. Likewise, since the power of taste knows flavors, it itself cannot be flavored. Consequently, each of the organs of sensation must lack some physical feature, namely, the physical feature it knows. Since reason knows all physical reality, it fol-

8. *ST*, I, q. 77, a. 5.

9. *ST*, I, q. 75, a. 2.

lows that reason must lack all physical features, that is, it must not be material at all.

A KNOWING POWER LACKS THE FORM IT KNOWS

But why should we think that a knowing power must lack the physical feature it knows? After all, the organ of sight does in fact seem to be colored. The eye is colored and the neurons are colored. Furthermore, the hand by which Sam feels heat does itself have temperature; it does not lack the physical feature it knows. Likewise, the tongue presumably has some flavor. Aquinas's claim, then, seems to be patently false, and as a consequence, his argument for the immateriality of reason collapses, or so it seems.

Thomas was certainly aware that the eye is colored, the brain is colored, the hand has temperature, and the tongue has flavor (cow tongues were eaten in medieval times as they are in ours). What did he mean, then, by claiming that a knowing power must physically lack that which it knows? He says that the physical presence would interfere with the knowledge, and then he gives the example of a sick person whose fever makes his tongue bitter, so that everything tastes bitter to him.¹⁰ Aquinas is not saying, then, that it is impossible to sense that which is physically present. To the contrary, that which is physically present is the only thing that is sensed. Since the tongue is bitter, the person tastes everything as bitter.

This claim may sound familiar. A person with a discolored pupil or lens would see everything according to that color; likewise, if the ear follicles were already in vibration, then the person could not properly receive sounds from the outside. In short, for all the external senses, the physical presence of some form inter-

10. *ST*, I, q. 75, a. 2.

feres with the pure and proper reception of that form. For this reason, we noted, temperatures are always perceived in relation to the temperature of the body. Perhaps something similar applies to the sense of taste, or perhaps the neurons that receive particular flavors—such as sweet or bitter—lack that particular flavor in their receptors.

When Aquinas says that the organ of sight must lack color, he refers to the pupil and to the fluid of the eye, which are indeed transparent.¹¹ He does not suppose that the eye lacks color entirely (which is clearly false). Rather, he thinks that the eye lacks color in that part in which it must receive color from the outside. Any color in this part—as with jaundice—does indeed interfere with the activity of seeing. In our earlier treatment (in chapter 2), we gave an updated version of Aquinas's claim. We said that the cones in the eye are *potentially* colored—as a table in complete darkness is only potentially brown—and that they become actually colored when light strikes them.

What does Aquinas mean, then, when he claims that the physical presence of some form interferes with the sensation of that form? He seems to mean that the physical presence prevents the reception of the form, since the form already present will be sensed.¹²

DIFFERENT MANNERS IN WHICH THE FORM IS RECEIVED

Unfortunately, it is unclear how this claim applies to reason. It does not even seem to apply to the internal senses. Recall that the internal senses do not physically receive some form; rather, the common sense receives its object from the external senses, and the other internal senses receive their object from the com-

11. *ST*, I, q. 75, a. 3.

12. *QDA*, a. 14.

mon sense.¹³ The internal senses, then, have no physical reception but only the reception of an immanent form (that is, the form, discussed in chapter 2, by which we take on the likeness of things in our acts of knowing) from some other sensing power.¹⁴ For these sense organs, then, the presence or absence of the physical form seems to be irrelevant.

The same may apply to reason as well. The imagination presents an object to reason, and then the agent intellect abstracts some attributes, leaving behind others, even as reason can understand that an eye sees, leaving aside whether the eye is brown or blue. No physical reception appears to be necessary. Indeed, no physical reception appears possible. After all, the form is received in reason in a manner different from the way it exists physically. Reason knows similar attributes apart from other attributes, but in physical reality the similarities are typically bound up with the concrete details. It is unclear, then, what it would even mean to say that the form is received physically. How could it be? If it were received physically, then it would not be abstracted from the differences.¹⁵

Still, reason is not exactly like the internal senses. It does not simply receive some immanent form from another knowing power. Recall the process by which the possible intellect receives the form known. The imagination receives its forms from the external senses, but reason does not receive its forms from the imagination. The forms in the imagination, although immanent rather than physical, are still particular singular forms. Reason knows abstract kinds of things—such as the nature of a triangle—without including the many concrete features that differ from individual to individual. The phantasm presented by the

13. SCG, bk. 4, c. 11, ¶4.

14. *ST*, I, q. 84, a. 6, ad 2.

15. *ST*, I, q. 75, a. 5.

imagination includes certain concrete features embedded within it, even as an imagined triangle must be acute, right, or obtuse. Consequently, the agent intellect must pull out certain features while leaving others behind.

When it comes to the reception of some form, then, we have three different situations. First, the external senses must receive the form physically; consequently, the presence of the physical form impedes the reception of some new form, even as bitterness in the organ of taste impedes the reception of sweetness. Second, the internal senses receive the forms from another knowing power; thus, they need not receive the form physically, and the physical presence of the form does not seem to impede the reception. Third, the possible intellect is different from both of these. It does not (and cannot) receive the form physically, as do the external senses. At the same time, it does not simply receive the form from some other knowing power. The imagination presents the image in which the form is found, but the form is not received simply from the imagination. Rather, the form is pulled out of this image. Unlike the form that comes to the imagination from the senses, the form presented in the phantasm must be transformed before being received by the possible intellect.

REASON MUST BE IMMATERIAL TO RECEIVE ITS OBJECT

Thomas claims that the presence of a physical form impedes the reception of other forms. This claim applies to the external senses but not to the internal senses. What about reason? Why should this claim matter to reason? Aquinas seems to think it does. But how?

Suppose that reasoning were merely an act of a bodily organ, as seeing is an act of the eye. What would follow? Two things would seem to follow that would prevent reason from knowing

as it does. First, reason would have to receive the form in the manner of physical existence, that is, it would receive physical similarities just as they exist physically, that is, together with the concrete details that differ from individual to individual.¹⁶ If a seal is impressed upon wax, the wax receives the image on the seal with all the details. The image of a triangle, for instance, comes to be in the wax not only with three-sidedness; it comes to be as an acute triangle, of a certain size, and so on. The possible intellect can receive the triangle, however, without the details: it can receive three-sidedness, leaving behind all the details.

As noted, if reason had an organ, then a second inconvenience would follow. The presence of some physical form in the organ of reason would impede the reception of the form to be known.¹⁷ Why? Because the possible intellect does not receive an immanent form from another power, the way imagination receives from the external senses the exact same form that exists in the external senses. The power of imagination is partly bodily, but it need not receive a bodily form, since it takes the form directly from the senses. In contrast, the possible intellect, if it had a physical organ, could not so readily receive an immanent form already prepared by another knowing power. No previous knowing power can provide this immanent form. With a physical organ, then, the possible intellect would have to receive a physical form.

Both of these points indicate that reason could not, in fact, have a bodily organ. If it did, then it would receive the physical similarities as they exist physically, that is, with the differences. In short, if reason had a bodily organ, then it could not possibly know certain kinds of things abstracted from other concrete features. Consequently, reason must not have a bodily organ. Likewise, if reason had an organ, then its reception of physical

16. *ST*, I, q. 75, a. 5.

17. *ST*, I, q. 75, a. 2.

forms would be impeded by any physical forms that are present (since, unlike the internal senses, reason does not receive its form directly from some other knowing power). Furthermore, there would have to be at least one such physical form, namely, the form of the organ itself. Since reason is able to know all physical bodies, there must be no such impediment. In short, reason must not have an organ.

As presented, the argument works by way of a counterfactual. If it were the case—contrary to the fact of the matter—that reason had an organ, then two things would follow that would prevent reason from knowing as it does in fact know. First, it would not know similar features of multiple things apart from the concrete differences. Second, it would not be able to know all physical bodies. Since both of these consequences are false, we can surmise that the supposition from which they arise—that reason has an organ—must also be false.

Aquinas claims, therefore, that reason is immaterial. It is nonphysical in every respect. As we have seen with the act of reason, what is nonphysical with regard to all physical being is immaterial. While other knowing powers have organs by which the person is aware, reason does not. Reason is a power that resides in no body. Rather, it resides immediately in the soul.¹⁸

IS THE BRAIN THE ORGAN OF REASON?

Earlier, we suggested an objection to the claim that reason is immaterial. It seems that we need the brain in order to reason, as is evident from certain forms of brain damage, which prevent people from reasoning. Whatever Aquinas may have thought, then, we can now know that reason must indeed use the brain as an organ.

18. *ST*, I, q. 75, a. 2; I, q. 77, a. 5.

This objection does not, in fact, touch upon Aquinas's claim. Thomas was fully aware that the brain is necessary for reasoning and that damage to the organ of the imagination can hinder reasoning.¹⁹ Indeed, his theory demanded it. If contemporary science had discovered that the brain (or some other organ) was unnecessary for reasoning, then Aquinas would have been forced to abandon his entire view.

How can Aquinas claim both that reason has no organ and also that reason requires the brain? Recall that when reason initially knows in a universal manner, it must first have a phantasm presented to it, from which the agent intellect abstracts similarities, leaving behind the differences. Recall also that when reason knows in a universal manner, it must always return to the phantasm; that is, reason must know the universal as it exists in some singular, if only the singular of the phantasm itself. Otherwise, reason would be falsifying, supposing the similarities to exist just by themselves.

In two ways, then, reason depends upon imagination. First, imagination must present the object to be known; second, reason must return to imagination, because it must return to the singular. Without imagination, reason could not function. We have seen, however, that the organ of imagination is the brain. When certain parts of the brain are damaged, then imagination is also damaged. Reason needs the brain, then, because reason needs imagination, and imagination, in its turn, resides in the brain.

Reason's dependence upon the brain is not the same as having the brain as its organ. The act of reason is not performed by the brain. Rather, the object of reason is presented by the brain, or more precisely, by the imagination, which has the brain as its organ.²⁰ With no object, there can be no act. Still, when there is

19. *ST*, I, q. 84, a. 7.

20. *ST*, I, q. 75, a. 2, ad 3.

an act of reason, it is not an act of the brain. Rather, it is an act of the soul apart from any bodily component.

AN EXISTENCE OF ITS OWN

Aquinas's argument for the immortality of the soul is almost complete. We have seen that the act of reason is entirely non-physical, that is, it is immaterial. From this point, we have seen that the power of reason is also immaterial, that is, reason has no bodily organ but resides immediately in the soul. From this last claim, Thomas concludes that the soul must have its own existence. Why? Because activity follows upon some subsisting agent, that is, it follows upon a thing with existence.²¹ But the activity of reason follows simply upon the soul; consequently, the soul must be a subsisting agent; it must be a thing with existence.

The final step of Aquinas's argument claims that the existence of the soul cannot be taken from it.²² The existence of properties can be taken away by destroying the substance in which they reside, even as the color of the piece of wood is taken away when that wood itself is destroyed through combustion. The existence of the soul cannot be taken away in this way, because the soul is not a property. The existence of a property derives from the existence of the substance in which it resides, but as we have seen, the existence of the soul is not derivative upon another created existence.

In only one other way, thinks Thomas, could the existence of the soul be taken from it. A thing that exists through itself can lose its existence if its components break apart. In this manner, a substance can cease to exist. A dog can cease to exist if its matter and form are separated, which indeed happens at death.

21. *ST*, I, q. 76, a. 1.

22. *ST*, I, q. 75, a. 6.

Although the dog has existence through itself, it can still cease to exist because it is composed of many elements. In contrast, the soul has existence through itself, and it has no parts that can be broken up. In no manner, then, can the human soul cease to exist.

As we have mentioned above, this argument for the immortality of the soul is not the stuff of idle conversation. Even those well versed in the thought of Thomas have struggled with it. We can hardly hope to explain it satisfactorily in this introduction to the psychology of Aquinas. Let it suffice that we have clarified some of its premises.

LIFE AFTER DEATH

The difficulties concerning the immortality of the soul do not stop once the conclusion has been reached. Odd consequences follow upon Aquinas's doctrine. What are we to make of the soul after death? Aquinas claims that it continues to exist, but what sort of existence does it have? It is clearly not a property, like color, shape, or relation. On the other hand, it is not quite a substance, although it seems to be "substantial." It is not quite a substance because the human person is the substance, and the human person is not just a soul. Only dualism claims that the human person is only a soul. According to hylomorphism, the human person is a substantial form together with first subject. The human person is an ensouled body.²³

When Tom dies, his soul continues to exist. Does it follow that Tom continues to exist? On the contrary, Aquinas says that Tom is not simply a soul but an ensouled body. If all that exists of Tom is his soul, then he himself no longer exists.²⁴

23. *ST*, I, q. 75, a. 4.

24. *ST*, III, q. 50, a. 4.

Still, his soul does have, by itself, the knowing power of reason. Does it follow that this soul—which is not quite Tom—can know? In one way, no. Why? Because reason depends upon the phantasms, as we have seen above, but this soul of Tom can have no phantasms, for without a body it lacks the organ of imagination. While the reason residing within the soul of Tom might retain some abstracted forms, it can never return to the phantasm, so at most it is left with vague notions of the natures of things existing by themselves.²⁵

That is not the end of the matter, however. Aquinas claims that when the soul is separated from the body, it begins to know in a new way, for it now has begun to exist in a different way, that is, without a body. It now begins to know in the manner appropriate for minds without bodies.²⁶

Minds without bodies? Yes, Aquinas thinks there are minds without bodies, which are more commonly known as angels.²⁷ Furthermore, his belief in angels does not depend simply upon religious belief. Rather, he thinks evidence in the world around us indicates the plausibility of minds without bodies. If we look at the spectrum of beings in the universe, we might expect to find some such minds without bodies, because they fit within what has sometimes been called the hierarchy of beings. This order begins with the lowest beings, that is, inanimate beings such as rocks and water. Plants are a step above these inanimate beings because they have the living activities of growth, maintenance, and reproduction, in which they act in some manner upon themselves. Animals are a step higher yet, having capacities not found in plants. Not only do they act upon themselves, they also have immanent activities, activities that do not change

25. *ST*, I, q. 89, a. 5.

26. *ST*, I, q. 75, a. 6, ad 3; I, q. 89, a. 1.

27. *ST*, I, q. 50, a. 1.

the object to which they are directed. Finally, above animals, we find human beings. Reason is a step above the knowing powers of the animals because reason knows in an immaterial way; furthermore, the power of reason is itself immaterial.

With human beings we have reached the top of the physical universe. Human beings are bodily but also immaterial. Is there anything higher? If we have a being that is body and spirit combined, then might it be possible to have a being that is entirely immaterial? Can we have minds entirely without bodies? That would be the next step in the hierarchy.

This step, thinks Thomas, is realized in angels. Angels do not exactly have reason, but they do have intellect. They do not move from one idea to another,²⁸ but they do grasp the natures of things. Besides this power of the intellect, angels lack all of the other powers we have discussed so far. They have no external senses, no common sense, no imagination, no estimation, no memory, and no emotions. All these powers are bodily, and angels have no body. Consequently, they have only intellect and also a power yet to be discussed, namely, the will.²⁹

Their intellect does not operate like our reason. Since they have no body, they have no imagination, and therefore they can have no phantasms from which to abstract ideas.³⁰ They have no need to abstract. They have, by their very nature, all of the ideas they need.³¹ The human mind has sometimes been compared to a blank slate, because we are not born knowing anything but must learn all that we know from experience. The angelic mind is the opposite. By its nature, it is a slate already filled. It does not follow that angels know all things. Furthermore, they can-

28. *ST*, I, q. 58, a. 3.

29. *ST*, I, q. 54, a. 5.

30. *ST*, I, q. 55, a. 2, ad 2.

31. *ST*, I, q. 55, a. 2.

not—at any one moment—be thinking all of the things that they do know.³² When a human being thinks upon one topic, such as a mathematical problem, he cannot at the same time think upon other topics. Similarly, when an angel understands with one of his ideas, he cannot at the same time understand with other ideas. Despite this limitation, shared with human beings, the angelic mind far surpasses the human.

We should note that when discussing angels, we have not necessarily stepped into the domain of theology. Thomas thinks that we can understand much concerning angels merely through our natural human reason. Furthermore, we should clarify the change that takes place to the human soul after death: we become, like angels, minds apart from bodies; it does not follow that after death we *actually become* angels. The latter is a popular belief that Aquinas thinks makes no sense. If we became angels, we would cease to exist, since our existence is tied up with what we are, namely, human beings. Souls separated from their bodies, then, do not become angels.

This odd thing—the soul separated from the body—can no longer know the way it used to know, for it lacks the imagination required for its thoughts. Is it unable to know at all? Aquinas thinks otherwise. Why? Because it now begins to know as angels know. When it exists in a way similar to an angel, then it also knows in a way similar to an angel. The human mind is filled with ideas, distinct from those it acquired in this life, by which it can know the realities in the universe.

What happens to this separated soul after death? Does it go to heaven or hell? Is it reincarnated? Thomas thought that philosophy could at least answer the last question. Reincarnation makes sense only within dualism, although even there it is unclear why a soul attaches itself to a body. Still, given that souls do

32. *ST*, I, q. 58, a. 2.

attach themselves to a body, dualism allows that a soul might attach itself to different bodies. At death, the soul is separated from one body. After death, it might reattach itself to another body.

Hylomorphism has no room for reincarnation.³³ The soul is only a part of a substance. When it continues to exist after death, it is, in a sense, a defective being, lacking the fullness that comes with the body. Still, the soul cannot just attach itself to any body. It does not become complete by any idle attachment. It becomes complete only through substantial union, in which the soul informs first subject (or prime matter) to make a complete substance. This soul, however, has already informed first subject and has already existed as part of a complete substance. As such, it is forever related to the body it once had. It cannot unite with some other body.

Philosophy—with which we are working in this book—can tell us no more, says Aquinas. Philosophy does not delve into heaven or hell. At most, philosophy might tell us that it seems fitting that the soul should one day be reunited with its body, that is, the resurrection of the body is most fitting to the soul.³⁴ But what could possibly bring about this resurrection? Nothing in nature, which is the domain of philosophy.³⁵

Philosophy, then, ultimately leaves us unsatisfied. It tells us that the soul is immortal but tells us little of life after death. What is the next life like? Philosophy can provide us only with clues. In this book, then, we will maintain a philosophical silence.

33. *Sppl.*, q. 79, a. 1.

34. *Sppl.*, q. 75, a. 1.

35. *Sppl.*, q. 75, a. 3.

Freedom

I am no bird; and no net ensnares me: I am a free human being with an independent will.

Charlotte Brontë

We have yet to discuss one remaining human power, namely, the will, which is like the emotions because it is a desiring power; at the same time, it is like reason, because it is a non-bodily, or immaterial, power. While the emotions are desires following upon sense knowledge, the will is a desiring power following upon intellectual knowledge, or the knowledge of reason.

We can divide human powers, then, into the non-mental living powers (which include growth, maintenance, and reproduction) and the mental powers—see figure 5.2. The mental powers are divided into knowing powers and desiring powers. The knowing powers are divided into sense knowledge and intellectual knowledge (or reason). Sense knowledge is divided into the external senses and the internal senses. The desiring powers are divided into the emotions and the will. The emotions follow upon sense knowledge (and are themselves divided into concupiscible and irascible), while the will follows upon intellectual knowledge. The locomotive power, or the power to move about,

can be loosely attached to the emotions. In each case, the action of the power is identified through its object.

When the topic of the will arises in contemporary discussions, people immediately think of free will or free choice. Human beings, the argument goes, have freedom, while other things are determined. Because of this freedom, human beings have moral responsibility, while rocks, trees, squirrels, and chimpanzees do not. Human beings have this special freedom because they have free will.

Aquinas agrees with this general line of argument, but for him the will is much more than the source of free choice. The will is, more fundamentally, a desiring power. As such, it has different acts of desire, such as love, enjoyment, hope, despair, and so on. Free choice is only one of these possible acts of desire. A full understanding of the will must investigate much more than free will. Indeed, free will itself cannot be understood in isolation from other acts of the will.

Still, it must be granted that free choice is an important act of the will; as such, it will occupy much of our time. This entire chapter will be devoted to an examination of contemporary views concerning free will, which discussion will provide a basis for understanding Aquinas's own account of free choice.

At first glance, the views on free choice can be divided into those maintaining that human beings are not free and those maintaining that human beings are free. As we will see, the latter view is itself divided into two further views, one called compatibilism and the other called the agency view. We will consider each view in its turn, beginning with the view that denies human freedom, which is typically called determinism because it claims that human beings are determined to act as they do by other forces, such as natural desires, instincts, and environmentally influenced conditioning.

DETERMINISM

The label “determinism” should not be confused with deterministic necessity, which is the belief that everything that happens is necessarily determined. The view that everything happens by absolute necessity has become outdated with the advent of modern quantum mechanics, which tells us that some things happen according to probabilistic causality. Perhaps some human actions, as well, are caused probabilistically. It does not follow, claims determinism, that human beings are free. We do not say that an electron is free, even though it moves according to probabilistic causality. This causality involves a sufficient cause (or set of causes) that does not determine the outcome; rather, it makes some outcomes more likely than others. A human being might be just like an electron. Both act according to probability, but neither is free.

In order to avoid confusion between determinism—the view that human beings are not free—and deterministic necessity—the view that everything happens by absolute necessity—some determinists prefer the name “responsibility skepticism.” It does not matter, they say, whether human actions are caused necessarily or probabilistically. Rather, it matters whether human actions are caused such that human beings can be responsible for their own actions.

According to responsibility skeptics, human beings are not responsible for their own actions. Whether their actions are caused according to necessity or according to some probability, those actions are ultimately caused like anything else in the universe. The falling of a stone down a slope is caused by the forces that act upon it, whether those forces act by necessity or by probability. This stone is not responsible for its action of falling. Likewise, the acts of human beings are caused by the forces that act upon

them, whether those forces act by necessity or by probability. A human being, then, is no different than a stone. Neither can be responsible for its actions.

Consider the variety of determined activity we find in the universe. The activities of balls upon a billiard table, for instance, are determined by various forces. The cue stick first hits the cue ball, which then moves according to various forces, such as the force imparted to it, the force of gravity, the counteracting force of friction, and so on. The cue ball eventually hits the seven ball, imparting motion to it. At the same time, the seven ball changes the movement of the cue ball. So it goes, until all comes to rest. The movements of all the balls are caused by certain natural forces, such that the balls in no way determine their own movement. Some of the natural forces are internal to the ball itself, such as its own mass or its own coefficient of friction. Nevertheless, the ball must move according to these natural causes.

The movements and actions of plants are more complicated than the movements of billiard balls, but the principles are fundamentally the same. Various natural causes—some external and some internal—act upon the plant such that it grows in this way or in that way. Examples of external causes include the amount of sunshine, the amount of water, the amount of nutrients in the ground, and so on. Examples of internal causes include the genetic makeup of the plant. None of these causes allows the plant to determine for itself what it will do. Each of its actions is a result of natural forces.

Animals are more complicated yet, but still the same principles apply. Various external forces act upon them, such as the nutrients received, the dangers they confront, and so on. Various internal forces, such as instinctive desires, also influence the resulting actions of animals. When you enter the kitchen, the cockroaches scurry away. The action results from the forces

acting upon the cockroaches together with their own internal instincts.

Certain animals can be conditioned to act in certain ways, even as a rat can be trained to push a certain button in order to get food. It does not follow that their actions are free. Rather, their actions result from instinct together with conditioning. Rats, like other animals, have inborn dispositions. Some rats, for instance, are more timid than other rats. Some exhibit greater anger; some are more readily despondent. Whatever their initial dispositions, all rats can be influenced by their environment to form new and conditioned dispositions. Whether they act from instinct or conditioning is irrelevant. In either event, their actions follow upon certain forces, some internal and some external.

Human beings are no different. That, at any rate, is the claim of responsibility skepticism (or determinism). We may be more complicated than other animals, but our behavior is fundamentally the same. Some human beings are born more timid, some are born more cheerful, some are born more irascible, and so on. On top of these inborn dispositions, human beings are formed and shaped by their environment, most radically by the upbringing they receive from their parents, teachers, and peers. In the end, they act based upon various forces.

When Anna goes to the grocery store, she supposes that she freely “chooses” to go to the store. In fact, says determinism, she can do nothing about her action. Given her inborn dispositions, given her upbringing, given the circumstances in which she finds herself, her action follows. She might have the illusion of choosing, but her action results from other forces (whether those other forces act deterministically or probabilistically). In no way, claims determinism, is she responsible for the actions she performs.

ARGUMENTS IN FAVOR OF DETERMINISM

The typical arguments in favor of determinism fall into three categories: (1) those based upon the nature of causality; (2) those based upon the predictability of human behavior; and (3) those based upon punishment, the giving of advice, and similar behaviors. The first argument is the most fundamental. The very nature of causality demands determinism. Before the advent of quantum mechanics, this argument claimed that causality, by its very nature, is deterministic. Given a certain cause, a certain effect must necessarily follow.

With quantum mechanics, this argument had to be updated. Sometimes a cause gives rise to an effect only with a certain probability. According to responsibility skepticism, this modification affects the argument little. In any event, whether a cause acts deterministically or with probability, the result comes about blindly from the causes. The probabilistic causes of quantum mechanics are not free. They still operate according to laws of nature; it is just that those laws are themselves now probabilistic. In short, determinism claims that there are no free actions because there are no uncaused actions or no entirely random actions.

The second argument in favor of determinism notes that we often predict human behavior with great success. We can guess, for instance, whether someone will react with anger to a recent political event. We can guess whether someone will like a certain movie. We can guess whether someone will cheat on a test. Of course, our guesses are not always correct, but often they are highly accurate.

How do these predictions provide evidence for determinism? Because of the way we make predictions. Clearly, we do not know the future directly. Rather, we know the present state of

affairs. We also know causal rules. By applying these causal rules to the present state of affairs, we project into the future. We can predict where Mars will be in the night sky in a year because we know where Mars is now and we know how gravitational forces and momentum act upon it. Likewise, when we play billiards, we predict (with fair accuracy) how the balls will move, because we know the current state of the table and we know (at some intuitive level) how the balls act upon one another and how they move upon the table.

If the current causes did not act according to certain rules (perhaps probabilistic rules), then we could make no projections into the future. Suppose that Mars could speed up or slow down on a whim. Then we would have no idea where Mars would be next year. Suppose that billiard balls could make right turns or left turns apart from any causal rules. We would have no idea how the balls would act. Our predictions depend upon the reliability of causal rules.

But free actions are precisely actions that do not follow upon causal rules. By their nature, then, free actions are unpredictable actions. Consequently, if human beings were free, then we could not predict human behavior. If Mars were free to speed up or slow down, we could not predict the behavior of Mars. If billiard balls were free to turn right or to turn left, we could not predict the behavior of billiard balls. In short, the determinist's argument works as follows: no free action can be predicted; human actions can be predicted; therefore, human actions are not free.

The third argument in favor of determinism relies upon behaviors such as punishment, exhortations, advice, and so on. By these behaviors we attempt to cause other people to behave in certain ways. If we punish a child for lying, we hope to cause him not to lie in the future. If we exhort somebody to help out those in need, we hope to cause him to actually help out. And so on.

In each case, we are engaging in a certain behavior that makes sense only if we think that it causes other people to behave in a certain way. We seem to be acting on the supposition, then, that human behavior is caused like anything else. In other words, we are acting on the supposition that human behavior is not free.

COMPATIBILISM

Those who reject determinism must claim that human beings are responsible for their own actions. There must be something special about human actions—different from those of a rock, a billiard ball, a tree, or a squirrel—such that human beings are responsible for them. They must have a special kind of cause.

These “free will” positions are typically divided into two distinct views: compatibilism and the agency view (or libertarianism). Compatibilism claims that determinism and freedom are compatible with one another. A single action can be both determined and free. According to compatibilism, then, free human actions are also determined human actions. In contrast, the agency view says that free actions cannot be determined actions. By their nature, free actions are self-determined actions. As such, they are not determined by other causal forces but by the agent himself. If Anna chooses to go to the grocery store, then her inborn dispositions, her conditioning, and her current situation may influence her decision, but they do not finally cause her choice. Only she herself can cause herself to choose.

Compatibilism should not be confused with the view that some of our actions are determined and others are free. Compatibilism is a much more complex and subtle view. It is not the sort of view that the average person on the street would even begin to consider. Rather than claim that some of our actions are determined and others are free, compatibilists claim that one and the

same action is both determined and free. When Anna goes to the grocery store, her action is the upshot of certain causal laws; at the same time, this very action is free.

With regard to actions being determined, compatibilism is no different from responsibility skepticism. Both views maintain that all human actions are the result of causes that act according to causal laws. If you ask a determinist what caused Anna to go to the grocery store, he will answer in terms of inborn dispositions, conditioned desires, and environmental forces. The compatibilist will give the exact same answer. The two do not disagree on this point.

In what way, then, do the two views differ? Compatibilism claims that Anna herself may be responsible for some of her actions, namely, those actions that are free. Her free actions are those that arise from her own internal beliefs and desires. These actions, although determined by various forces, are nevertheless free, and Anna is responsible for them.

The compatibilist notion of a free action—as an action that arises from internal beliefs and desires—derives from common experience. If Anna walks into the grocery store because she wants to (on account of her belief that she can get food inside), then we say that her action is free. If she is physically dragged into the grocery store by an assailant, then we say that her action is unfree. In this latter case, her action does not arise from her own beliefs and desires; rather, it arises from the force of the assailant acting upon her. The difference between free and unfree actions, then, can be found in their source. Free actions arise from internal beliefs and desires; unfree actions arise from external forces.

Given this definition of a free action, compatibilism then claims that we are responsible for those actions that arise from our own beliefs and desires. After all, we ourselves want them and give rise to them. We do not hold Anna responsible for her

action if she is dragged into the grocery store, but we do hold her responsible if she enters the grocery store of her own free will.

Compatibilism and determinism, then, do not differ in their accounts of what actually takes place in the world. According to both beliefs, Anna's action of entering the grocery store has the exact same causes. Rather, they differ by their notion of responsibility for actions. According to determinism, if all of our actions are caused according to certain causal laws, then we have no responsibility for our actions. According to compatibilism, we are responsible for some of our actions—those that arise from our own internal beliefs and desires—even though they arise from causal laws.

ARGUMENTS IN FAVOR OF COMPATIBILISM

Since compatibilism shares much with determinism, we should not be surprised to find that many of the arguments in favor of determinism are also adopted by compatibilism. Together with determinism, compatibilism maintains that all of our actions are caused by other forces. On this point, then, the two use the same arguments. Like determinism, compatibilism will point out that everything needs a cause—even human actions—and that causes always act according to certain rules, even if those rules are sometimes probabilistic; there is no such thing as an uncaused or entirely random human action. Like determinism, compatibilism will point out that we predict how human beings will behave, and that such predictions, which rely upon consistent causal laws, would be undermined by uncaused or random behavior. Like determinism, compatibilism will point out that punishment makes sense because we think the punishment will change the person's behavior.

Compatibilism differs from determinism in its account of

responsibility. On this point, then, we find new arguments for compatibilism. The compatibilist, for instance, points out that we normally identify free actions as those that arise from our own beliefs and desires, while we call unfree those actions that arise from some external force. Compatibilism points out, as well, that we hold people responsible for actions that they choose to do, that is, for actions that arise from their own beliefs and desires.

THE AGENCY VIEW

The third view is called the agency view, or libertarianism (not to be confused with the political view of the same name). While compatibilism and determinism agree upon what transpires in the world, disagreeing only upon their notions of responsibility, the agency view differs from both in its vision of what actually happens in the world. Free human actions are not simply the result of other causal forces, which act according to certain causal laws (whether necessary laws or probabilistic laws). Rather, free human actions are caused by the human beings themselves, and—as causal agents—human beings do not act according to preset causal laws. In this regard, human beings are typically thought to be an exception. Other causes act according to certain causal laws; human beings do not.

The agency view is often misrepresented as holding that free human actions are uncaused actions or random actions. These misrepresentations were given above in the argument based upon causality, which argued that there are no free actions because there are no uncaused or random actions. The agency view does not, in fact, maintain that free actions are uncaused or random. Rather, free actions have a particular kind of cause, namely, a human agent. Human actions, then, are not simply the upshot of certain natural forces.

The agency view can even concede that genetics, conditioning, and environment act as causal influences upon human behavior. For free actions, however, these causes must always remain at the level of disposition, that is, they dispose people to behave in certain ways; according to the agency view, free behavior is not simply a result of these causes. Because of her inborn disposition, because of her conditioning, and because of the situation in which she finds herself, Anna might be highly disposed to go to the grocery store. Still, even given all of these causes, she herself has to make the final determination. On account of her dispositions, she may find it easier to choose to go to the grocery store, but she still might choose otherwise.

On this view, then, we must distinguish between free actions and actions to which we are indifferent. When we are indifferent to an action, we do not care strongly one way or the other. Suppose that Bruce, after his friends recommend several movies, has no strong inclination to choose one over the other. We say he is indifferent. On the other hand, suppose that he is strongly inclined to go to one movie and ill-disposed toward the others. Then he is not indifferent. We make a mistake if we suppose that free actions always involve indifference, as if Bruce could be free in the first situation but not in the second. Even when we are strongly inclined to an action—or strongly disinclined to an action—we can still freely determine ourselves to it.

FREEDOM AND PREDICTION

For this reason, the agency view is unimpressed with the argument from prediction. For absolutely certain and precise predictions, of course, we require knowledge of the current situation together with knowledge of necessary causal laws. We can predict where Mars will be next year only because we know the

current forces acting upon it and we know that those forces act according to necessity. When our predictions are not absolutely certain, or when they are not completely precise, then we do not require either complete knowledge of the present situation or necessary causal laws. Incomplete knowledge might suffice, and the causes might turn out to be probabilistic. When we predict the weather, for instance, we do not predict with certainty but with a certain probability, and our predictions are not absolutely precise but typically give a certain range. Ultimately, even our predictions of heavenly bodies fall into this category. Perhaps some unknown heavenly body will interfere with the movement of Mars within the next year, so that our prediction is proven false.

Free human actions can be predicted in this manner—that is, without certainty and without precision—because human beings do have dispositions to act in certain ways. If Anna has gone to the grocery store every Monday for the last two years, then we can predict that she will go this following Monday. Nevertheless, the prediction might turn out to be wrong, and it is not an absolutely precise prediction (such as, “she will go to the grocery store on Monday at 09:45:26.37”).

Such uncertain predictions are consistent with the agency view. Anna’s dispositions make some choices more likely than others. Still, she herself must make the final determination. This final determination can be somewhat predictable and also free; it can still be her determination rather than the determination of the causes acting upon her.

INFLUENCING CAUSES

On the same grounds, the agency view is unimpressed with the argument from punishment, exhortation, praise, and so on. Of course, we expect to influence people’s behavior by punish-

ing, by exhorting, or by praising. It does not follow that we think their behavior is simply the upshot of these environmental forces. A mother who punishes her son for lying certainly believes that the punishment might influence her son's behavior. At the same time, she can believe that her son's future behavior must ultimately be determined by himself. Her punishment can influence, but he himself must determine.

According to the agency view, then, all three of the arguments in favor of determinism are ineffectual. The first argument supposes that all actions are the result of causes that act according to certain causal laws; there simply is no such thing as an uncaused action or an entirely random action; that is, there is no such thing as a free action. This argument misrepresents what is a free action, supposing it to be an uncaused action or a random action. In addition, this argument simply asserts, without argumentation, that no cause acts according to self-determination; all causes—so it is supposed—must fit the pattern of following certain preset causal rules.

The second argument (from prediction) ignores the fact that human beings might be disposed to act in certain ways (perhaps receiving this disposition from heredity, conditioning, and environment) and yet might also be free. The third argument makes the same error. It ignores the fact that something like punishment might be a causal force upon human behavior by influencing it, still leaving open the possibility of self-determination.

RESPONSIBILITY FOR OUR ACTIONS

With regard to the cause of free human actions, the agency view differs from both determinism and compatibilism. What about the question of responsibility? On this point, does it agree or disagree with compatibilism and determinism?

In one way, the agency view agrees with determinism. It agrees that human beings are not responsible for actions that are simply the result of certain causal rules. For responsibility, it does not suffice (as compatibilism supposes) that our actions arise from our own internal beliefs and desires. Certainly, if an action does not arise from our own internal beliefs and desires—as when Anna is dragged into the grocery store—then we are not responsible for it. Still, an action that arises from our own internal beliefs and desires is not necessarily free, and we are not necessarily responsible for it.

This point is best illustrated by supposing that compatibilism is correct in its account of the causality of human actions: human actions—even free human actions—are ultimately the result of certain causal rules. Given this supposition, claims the agency view, the compatibilist account of responsibility does not follow. Suppose that Anna is brainwashed to desire to go to the grocery store. We would not typically describe her action as free, and we would not hold her responsible for it. Nevertheless, this brainwashed action meets the conditions of freedom and responsibility laid out by compatibilism: it arises from Anna's own internal beliefs and desires. What is troubling is that those internal beliefs and desires were formed and shaped by the brainwashing.

On the compatibilist view of causality in the world, however, brainwashing is no different from the other sorts of causes that might influence Anna. She might be brainwashed to desire to go to the grocery store. On the other hand, her genetics, conditioning, and situation might also cause in her a desire to go to the grocery store. In either event, Anna herself makes no determination. Rather, other causes do. Anna is a puppet in either event. Simply identifying an internal belief or an internal desire as the cause of her action is not enough. She is still a puppet *if* compatibilism is true. Her action may arise from her own inter-

nal belief and desire, but that desire may itself be determined by something else, for instance, by brainwashing. But according to compatibilism, our beliefs and desires are *always* determined by something else.

The compatibilist account of responsibility, then, is inadequate. Nevertheless, it is appealing because it contains a half-truth. We are not responsible for actions caused by outside forces. Furthermore, the actions for which we are responsible do arise from our own beliefs and desires. That alone, however, does not make us responsible. According to the agency view, the actions for which we are responsible must arise from our own beliefs and desires and then also something more. They must arise from very particular beliefs and desires, or they must arise from beliefs and desires in a particular way, in a way that allows for self-determination.

FREEDOM AND PUNISHMENT

The practice of punishment can be turned against compatibilism, for we typically think that punishment is justified only for self-determined actions. "Arising from within" is an insufficient basis for punishment. If someone is insane, for instance, then we do not think that punishment is justified. Why not? After all, his action meets the compatibilist condition for responsibility: it arises from his own beliefs and desires. Nevertheless, we withhold punishment because we think that insane people are unable to make a self-determination.

The point can be clarified by examining distinct justifications for punishment, which include medicinal effects, deterrence, protection, and retribution. Punishment is called medicinal insofar as it is expected to change the offender's behavior. The mother who punishes her son for lying practices medicinal punishment, hoping that the punishment will "heal" her son of his defect.

Punishment is a deterrent insofar as it is expected to change the behavior of other people, besides the offender himself. If Kenny is fined for running a red light, we hope not only that it will change his behavior (medicinal punishment) but also that it will affect other people, such that they will be less likely to run a light themselves. Similarly, we put criminals in prison in part because we hope to deter other people from performing similar crimes.

Punishment is protection insofar as it prevents the criminal from doing further criminal behavior. A thief in prison can no longer steal. The punishment of prison, then, is protecting society from the thief.

Punishment is justified by retribution insofar as we think that the offender deserves the punishment. The car thief deserves some kind of retribution, some repayment for what he has done. He has put himself above others and above society, and now he deserves to be put back in his place. Sometimes we are disturbed when we hear of a light sentence given to a criminal. A rapist, for instance, might be given only six months for his crime. We are disturbed not so much because we think an opportunity to reform him has been passed up (medicinal), nor simply because we think that other rapists will be encouraged (deterrence), nor simply because we think that he might go out and rape others (protection). We are disturbed also because we think he did not get what he deserves. The punishment was unfair.

Of course, all of these justifications for punishment can be combined. We put a murderer in prison hoping that it will change his behavior (medicinal), that it will change the behavior of others (deterrence), that society will be protected from this criminal, and also because we think he deserves it (retribution). According to the agency view, however, one of these justifications is essential to punishment, namely, retribution. Punishment ceases to be punishment when retribution is left out.

We can seek to protect society from a madman by putting him in an asylum. We can also protect society from a contagious disease by putting those infected in quarantine. Such protection, however, is not punishment, for in neither case do we suppose that the person deserves it.

Likewise, we can seek to modify behavior in various ways. We might give someone shock treatment in order to cure him of a compulsive desire. The shock treatment is certainly medicinal, but we do not consider it punishment because there is no sense of being justly deserved. The shock treatment is not a matter of setting right some wrong that has been done. Similarly, if we (perversely) used shock treatment on Sarah, hoping to change the behavior of Sam, then it might serve as a deterrent, but it would not be punishment, precisely because it is unjust.

Punishment, then, must always involve a retributive element. According to the agency view, however, retribution makes no sense in the compatibilist world view. If someone is brainwashed to commit a crime, we do not suppose that he deserves punishment. Rather, he deserves punishment only for what he determines himself to do. An action arising from within is insufficient justification for retribution. If everything that we do is simply the upshot of causes beyond ourselves—as is ultimately the case according to compatibilism—then retribution is never justified and punishment makes no sense.

THE ABILITY TO ACT OTHERWISE

The self-determination of libertarianism is often characterized in terms of an ability to act otherwise. Anna has chosen to go to the grocery store, for instance, but she could have chosen otherwise. This ability, so the argument goes, is unique to the agency view. According to both compatibilism and determinism.

Anna must do what she does based upon the causes that give rise to her action. There is no sense in which she could have done otherwise.

Compatibilists often object to this portrayal. On their view, they claim, the agent could have done otherwise. Anna has indeed gone to the grocery store, but she could have done otherwise *if* she had desired to do otherwise. Indeed, not only *could* she have done otherwise, but she *would* have done otherwise.

Libertarianism finds this argument unpersuasive. The notion of “could have done otherwise” adopted by compatibilism is much too thin. It gives Anna herself no power to act otherwise. It says only that if things were otherwise, then things would be otherwise. If the causes in the world were different, then Anna’s desires would be different, and if Anna’s desires were different, then her behavior would be different. It is true that “If the moon were made of cheese, then it could be eaten.” This truth, however, has nothing to do with the real world, in which the moon is not made of cheese. It merely states how things would be if the world were different. Likewise, compatibilism merely says that Anna would act differently if the world were different. It gives no special power to Anna by which she can change the world herself.

This special power is precisely what both determinism and compatibilism find objectionable in the agency view. Why, when it comes to human beings, is there suddenly some special power, a special kind of causality not regulated by causal rules? What exactly is this special power and how can it be explained? In the end, so the argument goes, libertarianism merely asserts a mysterious power, providing no explanation for it.

IS FREEDOM AN ILLUSION?

Arguments in favor of the agency view are often based upon experience. First, we experience making choices; in these choices, what we do is up to us. Second, we observe in human beings a much greater diversity of behavior than in the animal kingdom, indicating the presence of a new kind of causality. Third, we experience deliberating about what we should do. This deliberation, so the argument goes, makes no sense if it is not up to us what we are going to do.

Determinism suggests that these experiences of choosing freely are merely illusions. Ultimately, our choices are the upshot of various causes acting within us and upon us. They are not up to us. Any experience to the contrary is simply an illusion that we must disregard when looking at the true causes in the world.

The claim that our experience is an illusion is often supported by certain experiments carried out by Benjamin Libet.¹ In these experiments, subjects were instructed to flex their wrists whenever they wished. Subjects were asked to report when they first felt the urge, wish, or intention to flex their wrists, and the timing of this urge was ingeniously recorded by Libet. At the same time, neural activity was recorded that indicated a “readiness potential” to move the muscles, that is, the type of neural activity that typically precedes the actual movement of the muscles. The experiments, then, recorded three events: (1) the awareness of an urge or intention to move muscles, (2) the readiness potential to move muscles, and (3) the actual movement of the muscles.

If our choices causally bring about our activities, then we

1. B. Libet, C. A. Gleason, E. W. Wright, and D. K. Pearl, “Time of Unconscious Intention to Act in Relation to Onset of Cerebral Activity (Readiness-Potential),” *Brain* 106 (1983): 623–42.

should expect the timing of the three to be in the order listed. We should first intend to move our muscles; this intention would then cause neural activity leading to the movement of muscles, which would then cause the actual movement of the muscles. Libet, however, discovered a different timing. The readiness potential appeared first, then the awareness, and then the actual movement. Given this sequence, it appears as if the awareness plays no causal role. The readiness potential is already leading to the movement of the muscles, and the awareness is simply a rider that appears at about the same time. The sense that our intentions actually cause our actions, then, is an illusion, or so the argument goes. What really causes our actions is the neural activity. The awareness—with the sense that it is up to us that we flex our wrist—is present, but plays no causal role. Determinists conclude that what we do is not, in fact, up to us. Rather, it is up to our neural activity.

Libet himself did not like this conclusion, but he conceded that his experiments disproved “positive freedom,” that is, the freedom to initiate our behaviors. Nevertheless, in another experiment he tried to show that we have “negative freedom,” which is the freedom to reject or veto impulses to act in a certain way.² He asked subjects to veto their desire to flex their wrist. The timing indicated that the veto came after the readiness potential. Libet concluded that although subjects did not initiate the desire to flex their wrists (this desire is initiated by the readiness potential that precedes it), they retained the ability to stop the causality of the readiness potential.

Libertarians have objected that the experiments prove nothing. The readiness potential is simply a necessary condition for some intention. It provides the urge to act, but the decision to

2. B. Libet, “Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action,” *Behavioral and Brain Sciences* 8 (1985): 529–66.

Table 12-1 Three views on free will

	<i>Are all our actions entirely externally caused?</i>	<i>Are some actions free?</i>	<i>How is a free action defined?</i>
Determinism	yes	no	an uncaused or random action
Compatibilism	yes	yes	an action arising from our own beliefs and desires
Agency view (or libertarianism)	no	yes	a self-determined action

act must follow. Indeed, as the experiment is set up, the decision has already been made. Subjects have decided that they will flex their hands when they feel the wish. They now simply wait for the signal (some urge or wish), and they carry out their previous decision.

WHERE FROM HERE?

This discussion of the contemporary views on free will has set the stage for our examination of the thought of Aquinas. Where does his thought fall within these three views? Can it fit neatly within any single one of them? These questions can be answered only by understanding the power of the will and its actions.

The Will

What I needed most was to love and to be loved.

Augustine

One word frees us of all the weight and pain of life: that word is love.

Sophocles

The mystery of freedom cannot be solved simply by focusing upon choice. As we have already noted, the will is much more than a choosing power. It is a desiring power that follows upon the knowledge of the intellect. Recall (as discussed in chapter 5) that some movements to an end arise from outside the thing, as an arrow is directed to a target, while other movements to an end—which we called inclinations—arise from within the thing itself, even as a plant is inclined to put out roots. Some of these inherent movements to an end are conscious, that is, they follow upon the awareness of some reality. Emotional desires, for instance, follow upon sense knowledge. The will is the conscious inclination that follows upon intellectual knowledge.

THE OBJECT OF THE WILL

As with all the powers, the will is identified through its action, and its action is identified through its object. The power of sight, for instance, is identified through its act of seeing, which in turn is characterized through its object, which is color. Similarly, the concupiscible emotions are distinguished from the irascible emotions through their objects. The concupiscible emotions concern a simple good or simple bad thing, while the irascible emotions concern a difficult good or a difficult bad thing. In order to understand the acts of the will, then, we must understand the object to which they are directed.

Like the emotions, the will is a desiring power. As such, its object is the good (or its opposite, bad or evil).¹ In what way does the will differ from the emotions, which also have the good for their object? The will and the emotions differ because their objects are not exactly alike. The object of the will is the good as known by reason, while the object of the emotions is the good as known by the senses.² The will differs from the emotions, then, in the manner that intellectual knowledge differs from sense knowledge.

The senses sort experiences into good or bad based upon their relation to certain outputs. The fundamental output is pleasure (or pain), whether that be what Aquinas calls exterior pleasure (pleasing to the sense of touch) or interior pleasure (pleasing to the imagination). The senses provide no understanding of general features. They provide, for instance, no general understanding of a triangle as a three-sided figure, although they can provide a reaction (positive or negative) to the image of a three-sided figure. Similarly, the senses provide no general understanding of

1. *ST*, I-II, q. 8, a. 1.

2. *ST*, I, q. 80, a. 2.

what it means to be good.³ They simply associate certain concrete experiences with what is pleasing.

In contrast, reason grasps similarities apart from the differences. It can understand, for instance, what it means to be three-sided. A bird can have no general idea of a triangle, but it can learn to peck the image of a triangle in order to get food. But a child, by a certain age, can grasp what it means to be three-sided. Likewise, reason can understand what it means to be good; we can understand what is similar between many good things. To the senses, “good” is nothing other than an association with what is pleasing to the senses. To reason, “good” is that which completes a thing.⁴

We readily grasp that a good eye sees well, and that a bad eye has some defect by which it does not see well. Likewise, a good pen writes well, while a bad pen fails to write well. A good heart pumps blood well, while a bad heart does not. In each instance, the good of the thing is that which completes it, that which realizes its purpose or function. Reason can perceive these many instances and pull out that which is similar between them. Reason can grasp the nature of the good.

Corresponding to the limitation of the senses is a parallel limitation in the emotions. The senses never get beyond concrete instances that are sorted according to their relation to pleasure and pain. Likewise, the emotions always move to some concrete good precisely insofar as it is associated with pleasure or pain.⁵ In contrast, reason expands beyond associations to an understanding of similarities. Corresponding to the expansiveness of reason is a parallel expansiveness of the will. Reason goes beyond the concrete instances, grasping the very nature of the

3. *ST*, I, q. 82, a. 5.

4. *ST*, I, q. 5, a. 1.

5. *ST*, I-II, q. 1, a. 2, ad 3; I-II, q. 4, a. 2, ad 2; *QDV*, q. 25, a. 1.

good. Likewise, the will desires objects precisely insofar as they are good.⁶

This capacity is best exemplified in our tendency to begin desiring objects under some abstract consideration, and—with further reflection—arriving at more and more concrete desires. Diana, for instance, might begin by desiring to take a trip to Europe. With reflection, she decides that she wants to go to England. With further reflection, she settles upon London. She then determines that it should be in April. And so it goes, until she has settled upon the concrete details of her trip. Similarly, Paul might begin by desiring nourishment through food; he narrows it to Italian food, and then some kind of pasta; he settles upon fettuccine with Alfredo sauce. So it goes with our desires of the will. We begin desiring objects under an abstraction, and we move to more concrete realizations.

The point needs clarification. We do not desire abstractions, for the good is realized only in the concrete. Rather, we always desire concrete goods, but we desire them under some abstract consideration.⁷ Diana does not desire an abstract trip to Europe. She desires a concrete trip to Europe, but she begins desiring it under no more particular consideration than that it be a trip to Europe. Paul does not desire abstract food. Rather, he desires actual food, but he begins desiring it under some abstract consideration.

The most abstract consideration of all concerns the good in general. The will can respond even to this most general of abstract considerations.⁸ We can desire an object simply insofar as it is good. We still desire the concrete good, since the good is always realized in the concrete, but we desire it under a very abstract consideration; we desire it simply insofar as it is good.

6. *ST*, I-II, q. 1, a. 2, ad 3; *QDV*, q. 25, a. 1.

7. *ST*, I, q. 80, a. 2, ad 2.

8. *ST*, I-II, q. 10, a. 1.

This point also needs clarification, for it is open to a very unfortunate misunderstanding. Earlier, we noted that reason can understand what is good for an eye, what is good for a pen, and what is good for a heart, pulling out from these many instances the general idea of what it means to be good. Now we have noted that the will desires the good precisely insofar as it is good. We might mistakenly conclude that the will desires the good of a pen, the good of a tree, and the good of a cat, since all of these goods fall under the general notion of what it means to be good.

When Thomas says that the will desires the good in general, he does not mean that the will desires any and every good. Rather, he refers to the *human* good in general. The will is a desiring power of a human being; as such, it desires what completes human beings. It differs from other desiring powers in that it can desire this completion precisely insofar as it is the human good. In contrast, the emotions always desire some concrete thing as associated with what is pleasing. The object of the will, then, is the good in general, which must be understood as the human good in general.⁹ Under this broad object, the will can desire many concretely specified goods, such as exercise, study, and dessert.

WILL VERSUS THE EMOTIONS

We have seen that the emotion of love is an impulse to a simple good, while the emotion of hate is an impulse away from a simple bad thing. The emotion of desire is the movement to a simple good that is absent, while the emotion of enjoyment is the resting in a simple good that is present. And so on. Diverse acts of the emotions are divided according to precise aspects of the object. The same is true for the will. Thomas speaks of love in the

9. *ST*, I-II, q. 1, a. 2, ad 3; I-II, q. 10, a. 1.

will and hate in the will. He speaks of enjoyment in the will and sorrow in the will. The will can hope and the will can despair.

The same words, then, can be used for diverse acts of the emotions and of the will.¹⁰ Love is in the emotions and love is in the will. Hope is in the emotions and hope is in the will. Nevertheless, the same words have distinct meanings when applied to the emotions and when applied to the will. The two sets of desires may share the same names, but they differ in essence.

Most dramatically, the two sets differ in the manner that reason differs from the senses. We have seen that each of the senses has a bodily organ. In contrast, reason is an entirely immaterial power, having no bodily organ; it resides immediately in the soul. Likewise, we have seen that the emotions are bodily desires, involving a bodily change of which we become sensibly aware; consequently, we call the emotions “feelings.” When we are afraid, for instance, our muscles tense, our heart begins to beat more rapidly, and so on. These changes are part of what it means to have the emotion of fear. Furthermore, we are sensibly aware—we feel—these changes within us.

The will, like reason, is not a bodily power.¹¹ Its actions involve no bodily change, and we are not sensibly aware of our acts of will. We do not feel the love of the will, we do not feel the enjoyment of the will, and we do not feel the hope of the will. Of course, we are aware of our acts of will, but our awareness is not sensible. Rather, we are aware of our acts of will through reason.¹²

This inability to sense our acts of will might lead some to deny the very existence of the will. We say that seeing is believing. More accurately, we might say, “Sensing is believing.” We tend to feel more certain of things we can sense. For this rea-

10. *ST*, I, q. 20, a. 1, ad 1.

11. *ST*, I-II, q. 9, a. 5; I-II, q. 17, a. 7; I, q. 77, a. 5.

12. *ST*, I, q. 87, a. 4.

son, we have seen that philosophical figures like David Hume never get beyond the imagination. Ultimately, they reject reason and the immateriality of reason. Handicapped with the lack of a power of reason, they cannot grasp relations, most particularly causal relations. These same philosophical figures have a similar difficulty with the will.

We readily acknowledge the emotions we can feel. We are less inclined to admit the acts of will that we cannot feel. We know the love of the emotions because we feel the love. What of the love of the will? Is it really there? Anna knows that she has chosen to go to the grocery store, but she does not *feel* her choice. She might feel her desire for food (which led her to go to the grocery store), and she might feel the satisfaction she takes in it once she begins to eat it, but she does not feel her choice to go to the grocery store nor does she feel her choice to eat the food. Nevertheless, the choice is real.

This example reveals another difficulty in recognizing the acts of will. All too often, they are hidden amid a clutter of emotions. The choice to go to the grocery store, for instance, does not stand by itself but is found together with emotional desires, such as the desire to eat. Almost every time we make a choice, we do so in response to, or in spite of, various emotions.¹³ We choose to yell because we are angry, we choose to run because we are afraid, and so on. On the other hand, we refuse dessert despite our desire for sweets, we stand our ground despite our fear, and so on. With our attention drawn to the sensible emotions, we might well lose sight of the choice. How much more, then, might we lose sight of the willed *love* for food as it sits next to the emotional desire for food?

We are aware of our acts of will, insists Aquinas, but we might confuse them with emotions. In the same way, the ideas

13. *ST*, I-II, q. 9, a. 2.

of reason have often been confused with the imagination. John Locke thought that general ideas were some kind of universal image. We have seen that there can be no such image, but Locke confused what belongs to reason with the more familiar imagination. In a similar fashion, the desires of our will might be attributed to the emotions.

Reason is profoundly more powerful than the senses. Likewise, the desires of the will are far more profound than the desires of the emotions. The emotions are always tied to some concrete reality associated with what is pleasing to the senses. The will is set free over the entire expanse of the good. In the emotions, for instance, sorrow is troubling indeed; in the will, sorrow wrenches the very soul. Joy in the emotions is uplifting; the joy of the will is profound peace.

We speak of sorrow of the will and joy of the will, but the foregoing discussion has indicated that these words are stretched when applied to the will.¹⁴ “Sorrow” initially implies something that is felt, as does “joy.” When applied to the will, these words refer to states of a conscious inclination without a bodily feeling. They refer to a state in reference to the presence of some evil or a state in reference to the presence of some good. We certainly feel a sensible joy when we reunite with a long-lost friend, and we feel a sensible sorrow upon the death of a friend. Deeper than the felt joy, however, is the joy of the will, which cannot be felt, and deeper than the feeling of sorrow is the corresponding sorrow in the will.

THE ACTS OF THE WILL

When Aquinas divides the acts of will, he focuses upon those that concern the good rather than the evil. Furthermore, the division between the simple good and the difficult good, which

14. *ST*, I, q. 20, a. 1, ad 1.

played such a prominent role for the emotions, is not so important for the will, since both of these are included within the general object of the will, that is, the good in general.¹⁵ Although Aquinas does speak of hope and despair in the will, these acts do not enter his official list of different acts of the will.

For the will, he focuses upon another division within the good: the division between an end and those things that are useful for the end. Health, for instance, is an end, and surgery is useful to attain this end. Both of these may be called “good,” but the word applies first of all to the end and is applied only derivatively to what is useful for the end.¹⁶ When dividing the acts of the will, Thomas also relies upon the threefold division between impulse, movement, and rest. Ultimately, then, Aquinas discusses six acts of the will: impulse, movement, and rest with regard to the end; and impulse, movement, and rest with regard to what is useful to the end.

Since the will is a desiring power that follows upon reason, for each act of will there must first be some act of reason that presents the object to the will. Anna must first of all know, for instance, that it is useful to go to the grocery store before she can desire (with her will) to go to the grocery store. Given the six acts of will, then, scholars of Aquinas have reasonably identified six acts of reason, although Aquinas himself is not as explicit about these.

The six acts may be best understood by considering a concrete example. Jim begins by wanting health. It is a good thing to have. Still, he is not absolutely certain that it is worth pursuing. After all, it may involve a commitment to exercising, eating healthily, and regularly getting a good night’s sleep—commitments that he is not sure are worth it. After investigation, he decides that he really should pursue health, so he intends to attain

15. *ST*, I, q. 82, a. 5.

16. *ST*, I, q. 5, a. 6; I-II, q. 8, a. 2.

health by the necessary means. Jim now begins to consider these means in greater detail. How much exercise should he engage in? What kind of exercise? Should he bike, swim, or run? Each has its pros and cons. After investigation, he consents to each as acceptable, but he must now determine which is best and to be preferred. Ultimately, he determines that biking is best, so he chooses a program of biking one hour a day, four days a week. The next morning he gets up and instigates his choice by actually moving himself to get on the bike and pedal away. After a month of this program (together with eating well and so on), his health has indeed improved, and he now finds satisfaction in his health.

The six acts, in the order in which Jim has engaged in them, are wanting (or willing), intending, consenting, choosing, using, and enjoying. Wanting, intending, and enjoying refer to the end; consenting, choosing, and using refer to the means, or what is useful to the end. In the example, the end is health. Jim begins by wanting health, he then intends to attain health, and eventually he enjoys health. The means, of course, are multiple, but the example has focused upon the means of exercise and ultimately of biking. Jim begins by consenting to the various kinds of exercise, he then chooses biking, and next he moves himself to bike, which movement Aquinas calls “using.”

Wanting is the impulse toward the end, but it is not yet movement to the end; movement comes only with intending.¹⁷ The idea is that we can want some good without yet having decided to pursue it. To settle upon pursuing it is precisely to intend it. When the good is attained, then we have rest or enjoyment.¹⁸

A similar division applies to the acts concerning the means. To consent to a means is simply to have an impulse toward it as a good and acceptable means. Consent is not yet movement

17. *ST*, I-II, q. 12, a. 1; I-II, q. 12, a. 1, ad 4.

18. *ST*, I-II, q. 11, a. 4.

Table 13-1 Acts of the will

	<i>Impulse</i>	<i>Movement</i>	<i>Rest</i>
Concerning the end	wanting or willing	intention	enjoyment
Concerning the means	consent	choice	use

toward the means, however, because we can find many means acceptable when only one or a few will actually be pursued.¹⁹ The pursuit or movement toward the means is choice.²⁰ After we choose, however, we do not necessarily execute the choice immediately. That execution involves a further act of will, in which the will applies the various powers of the soul to the activity; the will moves the body, for example, to get on the bike and pedal.²¹ This “using” is not exactly resting—since we rest in the end rather than the means—but it is parallel to resting; it is the will’s attainment of the means.

As mentioned above, an act of the intellect must precede each act of the will. Before wanting health, Jim must consider health in itself as a good thing. Before intending health, Jim must determine that the pursuit of health is worth it, given all the other goods that he wants. Before enjoying health, Jim must be aware that he has attained it.

Prior to consent, reason must deliberate concerning various means, determining that they are indeed acceptable means for the end.²² Deliberation is a process of looking at possible means to attain the end. Deliberation closes with judgment, which is a determination that some particular means should indeed be pursued.

19. *ST*, I-II, q. 15, a. 3, ad 3.

20. *ST*, I-II, q. 13, a. 1.

21. *ST*, I-II, q. 16, a. 1.

22. *ST*, I-II, q. 14, a. 1; I-II, q. 15, a. 3.

Table 13-2 Acts of will with acts of intellect

Act of	Concerning the end		Concerning the means	
	Intellect	Will	Intellect	Will
Impulse	judging the good considered in itself	wanting	deliberation	consent
Movement	judging the good as attained by some means	intention	judgment	choice
Rest	judging the good as possessed	enjoyment	command	use

This judgment precedes choice.²³ Prior to the actual use of our powers is a special act of reason that Aquinas calls “command,” a word that we might be more inclined to attribute to an act of will.²⁴ Aquinas, however, has in mind the act by which reason orders to execution. This order is not purely intellectual. Rather, Thomas teaches that the intellectual act of command comes with the impetus and movement that arises from the will. Command, then, is an act of reason joined to an act of will.²⁵

When discussing these multiple acts of reason and will, it is well to remember what we said in chapter 4. Ultimately, the powers themselves do not act; rather, the person himself acts by way of his powers. Reason does not deliberate; rather, the person deliberates by way of reason. The will does not consent; rather, the person consents by way of his will. The person commands himself to the execution of an action by way of reason. Speaking of powers acting, rather than a person, is a convenience that sacrifices accuracy.

23. *ST*, I-II, q. 13, a. 1, ad 2.

24. *ST*, I-II, q. 17, a. 1.

25. *ST*, I-II, q. 17, a. 1; II-II, q. 47, a. 8, ad 3.

ENDS AND MEANS

We would be foolish to think that these twelve acts—six of reason and six of the will—always follow in neat succession. The interplay of these diverse acts can be complex indeed. Sometimes two acts are joined. Thomas says, for instance, that when there is clearly only one reasonable means available, then consent and choice are one and the same act.²⁶ Likewise, intent and choice can be the same act, but viewed in different ways.²⁷ When Jim determines, for instance, that health is overall worth pursuing, we say that he intends health. At the same time, however, he has also chosen the means. He has not chosen the precise means, such as biking, but he has chosen to do whatever is necessary for health. Later, he chooses to bike as the particular means to health. At the same time, he intends to bike; he plans on doing the actions necessary for the goal of biking.

What counts as an end or as a means, then, is somewhat fluid. Broadly speaking, an end is something to which something else—a means or perhaps the person himself—is directed; on the other hand, a means is something that is directed to another. With regard to the act of intending, therefore, Aquinas says that the end can refer to the remote end or to a more proximate end.²⁸ Thomas gives the example of someone who desires health (a remote end) by way of taking medicine (a proximate end), which he does by first preparing the medicine (immediate means). The taking of medicine is an end in relation to the preparation; it is a means in relation to health.²⁹

Thomas is less willing to use the term “end” so flexibly when

26. *ST*, I-II, q. 15, a. 3, ad 3.

27. *ST*, I-II, q. 12, a. 4, ad 3.

28. *ST*, I-II, q. 12, a. 2.

29. *ST*, I-II, q. 12, a. 3.

it comes to the act of wanting and most especially when it comes to the act of enjoying.³⁰ We enjoy health, but we do not enjoy taking medicine, even though the taking of medicine is an end in some way or other. We do speak of “wanting” some things that are clearly useful means, such as wanting surgery in order to be healthy, but that reflects more the flexibility of the word “want,” which can often be used to express what Aquinas means by consent.

We “enjoy” those things that are in some way inherently good. Surgery is good, but only as useful for health, so we do not say that we enjoy it. On the other hand, sweet medicine is both useful for health and has its own goodness (because sweet), so we might say that we enjoy the medicine.³¹ Strictly speaking, however, Thomas says that we enjoy only the final end.³²

The idea is that deliberation generates a whole series of means and ends. Why is Jim biking? Because he wants to exercise (as opposed to biking in order to get to the grocery store). Why is he exercising? Because he wants to be healthy. Why does he want to be healthy? So that he can spend more time with his family. Why does he want to spend more time with his family? At this point, perhaps Jim might answer, “Just because.” Jim has a string of means and ends. Biking is for exercise, which is for health, which is for spending time with his family. Within this series, “spending time with his family” appears to be the final end. Nothing beyond it provides a further end.

In the strict sense, we enjoy only the final end. Furthermore, all of our “wanting” begins with the final end.³³ It may sound odd that we begin with the end, but that is how our desires

30. *ST*, I-II, q. 11, a. 3.

31. *ST*, I-II, q. 20, a. 3.

32. *ST*, I-II, q. 11, a. 3.

33. *ST*, I-II, q. 1, a. 4.

work, as well as the deliberations that follow them. Our desires might be described as upside down: beginning with the end. Jim does not begin by wanting to bike; rather, he begins by wanting health. Eventually, he comes to want to bike, but only after deliberating backwards. How will I get health? By exercising. How will I get exercise? By biking.

Every want, then, finds its beginning in the final end. The very first want, before all others, is for the human good. More precisely, it is for my own realization of the human good. In short, everyone begins by wanting his or her own good. That is the very nature of the will. Its natural object, as we have seen, is the human good. As such, this desire is unavoidable.

We should forestall an objection that we will address at length in a later chapter. Someone might interpret what has been said as a form of egoism. If each person unavoidably wants his own good, then he must be egoistic. He must seek his own good and only his own good. Never can he truly seek the good of others.

This argument misrepresents Aquinas by using a very narrow meaning of “one’s own good,” as if the word “my” can refer only to a private possession. Sarah might speak of “my car” and “my computer,” and then she refers to a private possession. But she might also speak of “my brother,” and presumably she does not mean that she possesses her brother. Rather, she has a kind of relation or connection to him, but not one of possession. Likewise, if everyone pursues “my good,” it does not follow that he pursues something that is simply a private possession. “My good” might turn out to be other people’s good. At a later point, we will address the precise manner in which Aquinas’s teaching—that everybody seeks his own good—is not a form of egoism.

A NATURAL DESIRE OF THE WILL

At this point, we wish better to understand what Aquinas means by saying that this desire is natural and unavoidable to the will. The will is like every other power: it has some natural object.³⁴ The object of sight is color, the object of the intellect is the common features of things apart from the concrete details, and the object of the will is the good in general, that is, my good in general. Thus, every act of the will is bound by this object. If there is an act of seeing, then it is an act of seeing color (gray, white, and black being particular kinds of color). If there is an act of the intellect, then it will involve the understanding of the natures of things apart from the concrete differences. And if there is an act of will, then it will involve wanting my overall good.

At any given moment, a person might not actually be seeing (for example, if his eyes are closed), although he has the power to see. The point, then, is not that the power of sight must necessarily see colors, for it might not be seeing at all. Rather, the point is that if someone is seeing with the power of sight, then he must be seeing colors; that is what it means to see. Likewise, the will need not always be wanting, for at any given moment there may be no act of will at all. But if the power of the will is acting—if it is wanting anything at all—then it must be wanting the good in general or some realization of it.

Of course, we want our overall good as it is realized in more particular goods. Jim wants his overall good insofar as it is realized in health, spending time with his family, enjoying nature, and so on. These distinct goods are not separate from his overall good any more than seeing blue is separate from seeing color. To see blue is simply to see a particular color. For Jim to desire

34. *ST*, I-II, q. 10, a. 1.

health is simply for Jim to desire a particular manner of realizing his overall good.

With regard to the ultimate end, Aquinas distinguishes between its essence and that in which it is found.³⁵ Its essence is nothing more than the object of the will, that is, the overall good of the individual. Everyone naturally desires—with his or her will—this ultimate end. That in which the end is found, on the other hand, can be multiple and diverse. Some people might expect to find their good in pleasure, other people expect to find it in wealth, still others in friendship, and so on. We have no natural desire for these particular realizations of the ultimate end. Rather, we must reason to these realizations and move ourselves to desire them.

The idea that the will has a natural desire will be important for understanding freedom, to be discussed in the next chapter. What has become clear in this chapter is that the will is much more than a choosing power. It is a desiring power in a broad sense. With our wills, we love and hate, intend and choose, hope and despair. Choice is but one of the acts of the will.

THE GREATEST LOVE

We form a mistaken view of our desires if we suppose that all of our desires and loves are emotional and that the will kicks in with choice simply to settle conflicts. Our more profound desires are not in the emotions. They begin and end in the will. If we pay attention only to our emotions, then we become like a bubble blowing in the wind, tossed about this way and that depending upon the fickle desires of the emotions. We must realize that we are not only our emotions. We are something much deeper and

35. *ST*, I-II, q. 1, a. 7.

more solid than our emotions. Our most essential self centers in our will.

Most importantly, we must recognize that love is not *simply* an emotion. We have seen, of course, that love is an emotion. We love things like chocolate ice cream, and we have romantic love for other human beings. But love is not *only* an emotion. Love is found in the will, and the love in the will is much more important than any love found in the emotions.³⁶ With our wills—as with our emotions—we love things that we wish to acquire, such as chocolate ice cream, money, a good reputation, and so on. In the will, however, we find another kind of love, which Aquinas calls a love of friendship.³⁷ We can love other human beings *for their own sakes*. We can seek the good *for them*. This friendship love resides in the will. It can find support in the emotions, but true love of others is in the will.

We will examine this love of others in the final chapter. First, we wish to examine what Aquinas might have to say about the freedom of the will.

36. *ST*, I-II, q. 26, a. 3.

37. *ST*, I-II, q. 26, a. 4.

Free Decision

The heart has its reasons that reason does not know.

Blaise Pascal

Let us return to the question of free will, first addressed in chapter 12. Should Aquinas be classified as a determinist, a compatibilist, or a libertarian? He might seem like a determinist, given his teaching that the will has a natural and unavoidable object. Aquinas, however, rejects determinism in no uncertain terms, repeatedly affirming the freedom of the will and human responsibility for actions.¹ Perhaps, then, he is a compatibilist. After all, he finds necessity in the will and yet affirms freedom in the will. In like manner, compatibilism holds that some of our actions are determined and also free.

Determining whether Aquinas is a compatibilist is not straightforward, largely because the view we call compatibilism was not advocated, or at least not widely advocated, before David Hume. Still, Aquinas makes some statements indicating that he might indeed reject compatibilism.² Does it follow that he would embrace the agency view? The answer to this question, as

1. *ST*, I-II, q. 13, a. 6; *QDM*, q. 6.

2. *QDV*, q. 22, a. 15; *QDV*, q. 24, a. 2; *QDM*, q. 1, a. 3; *QDM*, q. 6.

well, is far from clear. The answer will begin with an examination of causality.

FOUR CAUSES

Aquinas follows Aristotle in distinguishing between four different kinds of causes: efficient cause, final cause, material cause, and formal cause.³ The first two are called extrinsic causes; the latter two are called intrinsic causes, because they are causes within the very thing caused. We have discussed material cause and formal cause at length, though not explicitly in those terms. For a vase, the clay is the material cause and the shape is the formal cause. Both these causes are intrinsic to the effect, which is the vase itself. They are components or elements of the effect. For substances, the material cause is first subject (or prime matter), and the formal cause is the substantial form. For living things, including human beings, the material cause is first subject and the formal cause is the soul.

When we examined transient activities, we saw instances of efficient cause. When the fire heats the water, the fire is the efficient cause of the heat coming to be in the water. When a cat begets kittens, the mother cat is the efficient cause of the kittens coming to be. When Brett builds a chest, Brett is the efficient cause of the chest. An efficient cause brings something into existence, whether that something be a property or a substance.⁴ Unlike material and formal causes, efficient causes are extrinsic to the effects they cause. The fire is not part of the hot water, and the mother cat is not part of her kittens. In modern discussions, the word “cause” typically refers to efficient cause. It is clearly what Hume had in mind, for instance.

3. *DPN*, c. 4.

4. *DPN*, c. 4, ¶28.

Table 14-1 The four causes

Internal causes	material cause	that by which a thing is able to become other
	formal cause	that by which a thing is what it is
External causes	efficient cause	that on which the existence of a thing depends
	final cause	that for which something exists

Final cause is the purpose or reason for something. A vase, for instance, is for the sake of holding flowers, a car is for the sake of transportation, and an eye is for the sake of seeing.

Many modern thinkers are apt to deny the very existence of final causes. These doubts need not trouble us at the moment, since we are concerned with final causality in human actions, and all but the greatest skeptics are willing to concede that human beings act for ends. It matters not, then, whether the eye is really for the sake of seeing or whether it is a mere accident that, happening to see, has continued to exist because of its adaptive benefits. What matters is that when Jim bikes—or when any human being acts—he does so for the sake of some end, such as health.

It may seem that the end cannot possibly act as a cause, even for human beings, because it does not yet exist. Health cannot cause Jim's act of biking, for instance, because the health does not exist until after Jim bikes. Clearly, the biking is the cause of health, not the other way around.

For human actions, however, health does exist in some manner even prior to the act of biking; it exists at least in Jim's thoughts, and if it did not, then Jim would not bike. Of course, biking does cause health. At the same time, health can cause biking. How can the two cause one another? Because they do so in different ways.⁵ Biking is the efficient cause of health, while health is the final cause of biking.

5. *DPN*, c. 4, ¶¶28–29.

Final cause primarily serves to determine the character of an agent or efficient cause. The end of health, for instance, determines the activity of Jim, and the end of holding flowers determines what the shape of a vase must be. Without determination, an efficient cause would not act in one way rather than another.⁶

IS THERE NECESSITY IN THE WILL?

When Aquinas asks whether some necessity applies to the will, he answers in terms of the four causes.⁷ He distinguishes three kinds of necessity. (1) Conditional necessity arises from final cause in those situations in which an end demands a single means, at least if the end is to be attained well. Thomas gives the example of needing a ship in order to cross the sea. In our day, this necessity no longer applies to this particular example; we can cross the sea by other means, such as an airplane. (2) Coercive necessity arises from efficient cause, which forces someone to act in a certain way. If Robin is physically dragged off to prison, then she goes to prison by coercive necessity. Thomas lumps material and formal cause together for the third necessity, called (3) natural or absolute necessity. For material cause, he gives the example of death or corruption; because the material cause is in potential to become other substances, death will necessarily occur at some point. For formal cause, he gives the example of a triangle necessarily having interior angles equal to two right angles.

How do these three necessities apply to the will? Clearly, conditional necessity applies to the will in some situations. If Clare wants to cross the sea, and if the only means available is a ship, then Clare must get on the ship. Of course, she can give up her desire to cross the sea (if she is deathly afraid of sailing,

6. *ST*, I, q. 2, a. 3.

7. *ST*, I, q. 82, a. 1.

for instance). This option does not detract from her conditional necessity, which comes from the end. Given a certain end, a certain means is necessary. Eliminate that end (abandon the desire to cross the sea) and the necessity disappears.

Does coercive necessity apply to the will? For this question, we must distinguish between the act of will itself (such as choice) and the action that is chosen (such as going to the grocery store). For the latter, coercion can apply.⁸ Suppose that Anna has chosen to go to the grocery store. Nevertheless, she does not carry out her choice. Why? Because Kenny locks her in the house, physically forcing her—with coercive necessity—to stay at home. In this case, coercive necessity applies to the act chosen (going to the grocery store), because Anna is coercively prevented from carrying out her choice

What about the choice itself? Is there some efficient cause that can coerce Anna to choose to go to the grocery store? Aquinas's answer is emphatic: absolutely not.⁹ No efficient cause can coerce the will to this act or to that act. As we have seen, the very nature of an act of will is to be an inclination. But an inclination—by its nature—arises from within. The tree is inclined to grow roots, for instance, because something within the tree provides an impetus for this action. Since every act of will is an inclination, and since every inclination arises from within, it follows that every act of will must arise from within. None can arise from some external efficient cause.¹⁰ Coercive necessity, however, always arises from an external efficient cause. Coercive necessity, then, can never apply to acts of will.

8. *ST*, I-II, q. 6, a. 4.

9. *ST*, I, q. 82, a. 1.

10. In Aquinas's view, the causality of God might appear to be an exception, since God moves the will to act (*ST*, I-II, q. 9, a. 6). Ultimately, however, this case is not an exception, because God moves the will from within and according to its nature.

Table 14-2 Necessity in the will

<i>Type of necessity</i>	<i>Type of cause</i>	<i>Description</i>	<i>Is it found in the will?</i>
Conditional necessity	Final cause	when a means is necessary to achieve a desired end	yes
Coercive necessity	Efficient cause	when someone or something is physically forced to act	no
Absolute necessity	Formal cause	when characteristics follow necessarily from a form	yes
	Material cause	when consequence follows necessarily from potentiality	not applicable

We might think that if someone is hypnotized or brainwashed, then he is coerced to desire certain things or to choose things. According to Thomas, however, these cases do not involve coercion of the will. Rather, they involve the elimination of the acts of the will. Someone who is brainwashed is not coerced to choose; rather, he is made to act without choice.¹¹

What of the third kind of necessity—absolute necessity—which arises from material or formal cause? Does it apply to the will? Again, Aquinas's answer is emphatic: absolutely yes.¹² The will is a certain kind of power and every power has a nature determined by its object. By its nature, the will (if it acts at all) must desire the overall good of the person. Just as every act of hearing must be an act of hearing sounds, so every act of willing must be

11. *ST*, I-II, q. 10, a. 3.

12. *ST*, I, q. 82, a. 1.

an act of willing the general good. This necessity was the focus of much discussion in the last chapter.

With this answer, it may seem that Thomas is a compatibilist. After all, he believes that the will must act according to a certain nature, and at the same time he says that the will is free. This conclusion, however, is too hasty. After affirming that some kinds of necessity apply to the will, Aquinas immediately says that not every act of the will is necessary.¹³ A compatibilist thinks that one and the same action is both determined by various causes and at the same time free. In contrast, Thomas says that some acts of will are necessary while others are not. By necessity, we must desire our overall good. No necessity, however, demands that Anna choose to go to the grocery store.

THE INTELLECT CAUSES THE WILL TO ACT

Does Aquinas, then, maintain the agency view? To answer this question, we must see what Thomas has to say concerning the causes of the act of will. He asks whether the intellect causes the will to act,¹⁴ whether the emotions cause the will to act,¹⁵ and whether the will itself causes its own action.¹⁶ The answer to these questions will help uncover in what manner our choices are free.

When Aquinas asks whether the intellect causes the will to act, he makes a crucial distinction.¹⁷ A cause must determine the will in some manner, but there are two ways in which it might be determined. First, it might be determined to act or not to act; second it might be determined to this act or to that act. On the one hand, Jim might choose or not choose; on the other hand, he

13. *ST*, I, q. 82, a. 2.

14. *ST*, I-II, q. 9, a. 1.

15. *ST*, I-II, q. 9, a. 2.

16. *ST*, I-II, q. 9, a. 3.

17. *ST*, I-II, q. 9, a. 1.

might choose to bike or to swim. This same twofold determination is found in other actions as well. Someone might see or not see, for instance, and he might see blue, green, or any other color. The power of sight, then, must be determined to see or not to see, and it must be determined to this or to that.

The power of sight is determined to see or not to see by the agent himself, who can open his eyes and close them. In general, says Aquinas, when the person has control over some activity, the will is the ultimate source of determining to act or not to act. We choose to open our eyes or close them, to imagine or not to imagine, to move or not move our hands. Of course, we have no control over some actions. We cannot choose, for instance, to keep our leg still when our knee is tapped, triggering a reflex response.

The power of sight is determined to see blue, green, or some other color by the object presented to it. If Sarah is looking at a brown table, then her act of seeing is determined to brown; if she is looking at a red flower, then her act of seeing is determined to red. In general, says Thomas, an act is determined to this or to that by its object. Acts of tasting, for instance, are determined by the object tasted and acts of imagining are determined by the object imagined.

Aquinas applies these insights to the will. On the one hand, Jim can choose or not choose, which will be determined by Jim insofar as he is an agent, ultimately by his will. On the other hand, Jim can choose to bike or to swim, and the character of this choice will be determined by the object he chooses. This object, however, is presented to the will by reason. Jim deliberates about what exercise is best, and he reaches the judgment that biking is best. Ultimately, then, Thomas maintains that the will is determined to this act or to that act by way of the intellect, which presents the object to the will.

Once again, then, it seems like Aquinas might be a compati-

bilist. After all, the will is determined by the intellect. Given that Jim has judged that biking is best, he must choose to bike. The judgment of reason comes first, and then the choice follows.

On Aquinas's account, however, the relation between the judgment of reason and the subsequent choice may not be so simple. Thomas insists that the will is not necessitated by objects that are less than completely good.¹⁸ In other words, the will is necessitated with regard to the overall good, but not with regard to lesser goods. Every other good, says Aquinas, has some good and some bad about it (or at least we may perceive it as such). When presented with the good of health, then, or with the good of biking, or with the good of going to the grocery store, or with any other particular good, the will is not necessitated.

Whether the will chooses any of these particular goods, then, may depend upon the will itself. Thomas compares the will to the eyes. Suppose the eyes look upon an object that is partly colored and partly transparent, such as a glass pane that has an image on part of it. Necessarily, the eyes see color, but if they happen to look at the part of the object that is transparent, then they will see nothing (of that object). By analogy, when the will is presented with an object that is partly good and partly not good, then it may choose or not choose. By focusing upon what is good, it is led to choose; by focusing upon what is not good, it may not choose. Biking seems good to Jim, but he recognizes that it has some drawbacks. By dwelling upon these negative features, he may not choose to bike.

THE WILL CAUSES ITSELF TO ACT

The eyes differ from the will in one very significant manner. The eyes are determined to look at this or that part of the glass

18. *ST*, I-II, q. 10, a. 2.

pane by the will. Ultimately, then, they have no freedom of their own. In contrast, the will moves itself to act or not to act.¹⁹ The will is unique in this respect; it alone moves itself to act or not to act. When presented with a judgment—such as the judgment about biking—the will is not necessitated by the object. Whether the will chooses or does not choose may depend, then, upon the will itself.

How can the will move itself? Would it not, thereby, become its own cause? Not, says Aquinas, if it has one act by which it moves itself to a distinct act.²⁰ By desiring health, the will can move itself to desire to bike. The will has one act—the desire for health—and it moves itself to another act—the desire to bike. By desiring some end, says Aquinas, the will can move itself to desire some means. Recall that an agent acts by way of some form and that it makes the patient to be like this form, even as fire heats by way of its own heat, thereby making the water to be like itself. The will is no different. It has some form—the desire for the good of health—by which it can move itself to a new act. This new act must in some way be like the original. The desire to bike is indeed a desire for health, but it is a particular realization of this desire.

It is true that the will moves itself only by way of deliberation.²¹ Jim begins by desiring health and then he deliberates about ways to attain health. At the close of his deliberations, he reaches the judgment that he should bike. When the will moves itself, then, it does so only by way of reason. Should we conclude that the will is necessitated by the judgment of reason?

This conclusion ignores the difference between the way the reason determines and the way the will determines. Reason de-

19. *ST*, I-II, q. 9, a. 3.

20. *ST*, I-II, q. 9, a. 3, ad 1.

21. *ST*, I-II, q. 9, a. 4.

termines with regard to the object (to this act or to that act); the will determines with regard to acting or not acting.²² The judgments of reason, then, cannot move the will to act, for that is not the way that reason moves. They can determine a particular object, but the *movement* to this object depends upon the will.

Thomas clearly distinguishes between the “freedom” of animals and the freedom of human beings. Animals are free in a very limited sense, namely, their judgments concerning a desirable object can change.²³ A squirrel might see a nut and desire it, but then it perceives a nearby dog and judges that getting the nut is undesirable. Whether the squirrel desires to get the nut or to stay safely in the tree depends entirely upon its judgment, which can change. If human beings had to follow whatever judgments reason presented, then they would be no different than the animals. Their judgments might change, but given a certain judgment, choice would follow of necessity. Thomas, however, is clear: human beings have something more than the animals. Human beings alone, he says, are masters even of their judgments.

In the interplay between reason and the will, then, reason begins by presenting some good (such as health), which the will then desires. Next, the will moves reason to deliberate, in order to determine whether this good is worth pursuing and by what means. The deliberations of reason ultimately issue some judgment about actions to be performed (such as biking). The will then must accept or reject this judgment.²⁴ More precisely, the will must either continue with its movement to deliberation or it must cease deliberation and move to the action that reason has presented.

22. *ST*, I-II, q. 9, a. 3, ad 3.

23. *QDV*, q. 24, a. 2.

24. *ST*, I, q. 83, a. 3.

Before we proceed, we should recall that the manner in which we have been speaking is a kind of shorthand. Speaking of reason judging and of the will choosing, speaking of reason presenting and of the will moving, is not quite accurate. These powers by themselves do not ultimately act. Rather, the person acts by way of his or her powers. It is not so much that reason judges; rather, the person judges by way of his or her reason. It is not so much that the will chooses; rather, the person chooses by way of his or her will. As a human person, you are not pushed about by your powers. Rather, your powers are your instruments, by which you yourself act.

Notice the surprising elegance of Aquinas's position. The will is free precisely because it has necessity. In all of its acts the will seeks, by necessity, the overall good. From this first desire the will can move itself to desire other objects. While these other objects have some share in the overall good, they do not completely realize it. They have some good, but they also lack some good. Within the will, then, there is no necessity for any of these lesser goods. Through its necessary desire, then, the will can move itself to desires for which it has no necessity.

The resulting choice of the will is not an uncaused action. Nor is it a random action. The choice is caused by the will itself. The will is not entirely mysterious; it is like other causes. Just as fire possesses heat and passes the heat to water, so the will possesses some form, namely, the desire for the overall good, from which it moves to further desires for more concrete goods. The very expansiveness of the form possessed by the will, however, cannot be fully realized in the form it passes on. The expansiveness of the overall good cannot be fully realized in the many particular goods we choose.

At the same time, the will is unlike other causes. It acts upon itself. From one action, it moves itself to another action. This

novelty of the will, however, is not completely unexpected. In immanent activity, we find an activity that does not go outside itself to change some patient. As we move up the chain of immanent activities, we eventually reach reason, where we find completely immaterial immanent activity. As we have seen, reason bends back upon itself. With human beings, we have self-awareness; we have a mind aware that it gazes upon the world. A similar self-reflection is found in the will, which also has entirely immaterial activity.²⁵ Reason, however, bends back upon itself with regard to the formal object, while the will bends back upon itself with regard to efficient causality. The will alone, then, moves itself to act or not to act. It seems, then, that Aquinas might be willing to accept some version of the agency view.

Given the intricate interplay between reason and will, Thomas may not be so surprised at the results of Libet's experiment. Recall that subjects were asked to clench their fists when they felt the desire to do so. Libet discovered that the subjects first had a nerve impulse associated with moving their hands and only then were they aware of an urge to move their hands. This result might follow from Aquinas's teaching on the relation between imagination, reason, and will. As we have seen, every act of reason is accompanied by an act of imagination, which itself is realized in some activity of the brain. It should be no surprise, then, if neural activity precedes an act of reason. We have also seen that a judgment of reason must always precede an act of will. In the situation of the experiments, then, there might well be a brain activity which is part of an urge to flex one's fingers. Reason, becoming aware of this urge, forms a judgment that it is time to flex one's fingers. Only then can the will accept or reject this urge.

Libet's notion of a "negative freedom" also fits well with Aquinas's idea that the will determines to act or not to act. First,

25. *ST*, I-II, q. 11, a. 3, ad 3; I-II, q. 16, a. 4, ad 3.

reason presents clenching the fist as good (perhaps following upon an emotional desire that involves an act of the brain). Only then can the will act or fail to act. Only then can the will accept the good presented by reason or reject it.

INFLUENCES UPON THE WILL

In chapter 12, we distinguished between freedom and indifference. A free agent is not determined by the causes that act upon him. It does not follow that he is indifferent, that he does not care strongly one way or another. Someone who is free might still be inclined strongly toward one choice over another. While the agent remains free, he might be influenced in one direction or another by the causes that act upon him. Aquinas himself thought that these influences could be very strong. A majority of human beings, he said, are swayed by their passions, which in turn can be moved by various environmental factors.²⁶

We have seen that the intellect moves the will by presenting the object, while the will moves itself according to exercise, to act or not to act. In what way do the emotions move the will? They move the will, says Aquinas, by way of reason.²⁷ Our emotional desires can influence our judgments. Perhaps Jim has had a bad accident on a bicycle, so that when he thinks of exercising by biking, he has a strong reaction of fear. Because of this reaction, he judges that it would be better to swim rather than to bike. The emotion ultimately influences his choice, but only by first influencing his judgment of reason. From experience, we know in general that our judgments are strongly influenced by our emotions. Ultimately, then, the emotions move the will by way of object. They influence the object presented to the will.

26. *ST*, I-II, q. 9, a. 5, ad 3.

27. *ST*, I-II, q. 9, a. 2.

Sometimes, of course, we act on the impulse of an emotion spontaneously with no reflection. When someone irritates us, for instance, we might make a snappy reply with little thought. In such cases, we may make no choice at all. In other words, these emotions do not influence the will; rather, they bypass the will. We act on the emotion; we do not act through any choice of the will. These cases of acting on emotional impulse, however, will concern—except in the case of temporary insanity, which also bypasses the will—only minor activities, which we do spontaneously without reflection. Most of our actions engage at least a little reflection, and thereby engage the will.

The emotions themselves are influenced by other factors. Thomas was fully aware, for instance, that we can inherit certain emotional dispositions.²⁸ Some people are born more timid, for instance, while others are born more bold. Furthermore, these dispositions can be modified through experience. An initially timid individual who grows up in a violent environment might become more timid yet. In a different environment, his emotion of daring might be encouraged.

The will can have its own dispositions, distinct from the dispositions in the emotions. The two kinds of dispositions, however, are not exactly alike. The emotions are bodily powers. Consequently, the body with which we are born can include emotional dispositions.²⁹ In contrast, the will is an entirely immaterial power. As such, its dispositions are not directly influenced by the body.³⁰ Dispositions in the will are not genetically inherited.

Like the emotions, however, the dispositions in the will can be influenced through other factors. A child who grows up in a loving environment, for instance, has the disposition toward love

28. *ST*, I-II, q. 51, a. 1.

29. *ST*, I-II, q. 9, a. 5, ad 3.

30. *ST*, I-II, q. 9, a. 5.

encouraged. The loving environment encourages two separate dispositions: one in the emotions, and one in the will. While the environment might encourage certain dispositions in the will, these dispositions can be directly formed only by the individual's own choice.³¹ By repeatedly choosing certain goods, we strengthen our desire for these goods and make future choices easier and more likely. Someone who repeatedly chooses to share with others, for instance, develops a disposition of generosity. In the future, he finds it easier to choose to be generous.

Of course, other environmental factors can influence our choices. Opportunity itself is an important influence. Someone who is given an opportunity to steal money might actually steal it, thereby encouraging a greedy disposition in his will. Most of all, however, our environment influences our choices by presenting some things as good and others as bad. In our current society, for instance, wealth is glorified, so that people are more likely to form the judgment that wealth is worth pursuing. Likewise, the prevalence of sexual imagery in our society (besides stimulating the passions) suggests that happiness can be had only with sexual pleasure.

A pattern emerges from this examination of influences upon the will. Every influence upon the will—except the influence of the will upon itself—acts by way of reason. Heredity influences our emotions, but our emotions influence choice only by influencing our judgments. Environmental factors might also influence our emotions, or they might immediately influence our judgments. In either event, they move the will only by way of reason. Even the dispositions in the will, which are formed by the individual's own choices, can influence future choices by way of reason, for the judgment of reason can be influenced not only because we have an emotional desire for something; it can also

31. *ST*, I-II, q. 51, a. 2; I-II, q. 52, a. 3.

be influenced because we have a stronger desire in the will. All of these influences, then, affect the will by way of reason. Reason itself, however, moves the will by presenting an object to the will. All of these influences upon the will, then, operate by affecting the manner in which the good is presented to the will.

The dispositions of the will itself, however, are different from other influencing factors. They may indeed influence by way of modifying the manner in which the object is presented, but they also influence future choices in another way. They give the person a stronger disposition—in his will—to similar choices. His self-movements, then, are made easier or more difficult based upon his past choices.³²

Despite these many influences upon the will, the will remains free. Certain choices are made easier; other choices are made more difficult. In the end, however, we must choose. We must move ourselves to some particular act. When faced with a decision, we must always remember that what we do is up to us.

32. *ST*, I-II, q. 49, a. 3.

Purpose

You have created us for yourself, O Lord, and our hearts
are restless until they rest in you.

Augustine

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

T. S. Eliot

We have examined human knowledge and human desire. Human knowledge begins with the external senses, by which we know the world around us. Next, the internal senses, such as imagination and the instinctive estimative power, come to know by way of the external senses. Finally, reason, taking what is known by the senses, abstracts (or drags out) similarities and becomes aware of its own act of knowing, recognizing its conformity with the world around it. The self-conscious mind is born, gazing upon itself gazing upon the world.

Human beings also have conscious desiring powers. While knowing powers take in the world, desiring powers respond to

the world. Following upon sense knowledge, we have a variety of emotions, and following upon reason we have the most profound desires of all, the desires of the will. In the will, we also find a radical freedom, an ability to move ourselves to act or not to act. The self-conscious agent is also the self-determining agent.

We know a substance by way of its powers, and we know powers by way of activities; the activities themselves are identified through their objects. We have, therefore, examined these various activities in terms of their objects, thereby coming to understand the powers that underlie the activities. Under the powers themselves, however, is the human person. We know what we are—we know what it is to be human—by understanding what we do.

THE IMPORTANCE OF OUR SELF-PERCEPTION

Understanding what we are is no mere curiosity. It profoundly affects the way we lead our lives. One faulty vision, for instance, presents the human person as not much more than an incoherent bundle of emotional desires. A life led under the shadow of this vision tends toward the helpless pursuit of whatever desire is now most pressing. Helpless, because we are moved about by our desires; we do not move ourselves. We are victims of our desires, fated to follow where they lead.

When we begin to understand that not only are we emotional beings but we also have more profound desires in the will, then we can place a distance between our true selves and the demanding cacophony of emotional desires. We are not merely what we feel. We are something more profound. We need not choose to satisfy all our desires. We can take control of our desires.

Faulty visions of the human person can have yet more damaging effects upon our lives. They can foster a sense of meaning-

lessness, a sense of despair. Why should we go on leading our lives? What is the point of it all? If we, as human beings, are mere cosmic accidents, then our lives have no purpose. The most we can hope to salvage from such a life is an occasional sense of satisfaction.

With regard to the meaning of human life, there are three primary visions. First, some say that there is no meaning to human life. Second, some say that we can give meaning to our own lives. Finally, some say that our lives have a meaning that we choose to fulfill or to reject. Thomas belongs to the third group.

Meaning or purpose implies that there is some goal or end to life. The purpose of a knife is to cut and the purpose of an eye is to see. These things have a purpose insofar as they have some end to which they are directed. Likewise, our lives have purpose insofar as they have some end or goal.

A MEANINGLESS LIFE

Those who deny purpose to life claim that life has no goal. The world is full of blind forces that interact with one another. Planets revolve around stars. The stars heat the surface of the planets. The chemicals on the planets react with one another. Some chemicals replicate themselves. Some of these self-replicating organizations colonize and replicate as clusters. Some chemical reactions cause a state we call consciousness. Everything, so the argument goes, is the consequence of blind forces bumping into one another. None of these forces acts for an end. They simply produce results.

In this scheme of wildly unlikely accidents, human beings are just one more accident. Like the rest, they have no goal, no purpose. They have a variety of desires, but these desires themselves are simply the result of chemical reactions beyond their

control. Life might turn out to be pleasurable or it might turn out to be painful, but it will not turn out to be purposeful. On this view, we can hope to gain pleasure, but little more.

SELF-CREATED PURPOSE

Unwilling to accept this bleak verdict on human life, some have suggested that we can give meaning to our own lives. We can set goals, thereby defining who we are. We can decide, for instance, that we will try to make the world a better place. This goal gives meaning to our otherwise empty lives. Meaning or purpose is not *given* to our lives. Rather, we give meaning to life. In this view, we can define who we are.

This view has a rather unpleasant upshot: we can define our lives and our purposes any way we want. Someone might choose to make the world a better place, but an Adolf Hitler might choose to acquire power and dominion for himself. Is one purpose better than another? Not according to this view. They are simply different. Any goal—whether to help others or to torture others—can give purpose to someone's life, and this purpose is the most we can hope for from our choices.

Some have tried to defend this view of subjective choices by pointing out that Hitler was a kind of fanatic. It is okay to choose our own purpose, they claim, just so long as we are not fanatical. This view seems to advocate the love of mediocrity. Hitler, no doubt, was a fanatic. But so was Mother Teresa a fanatic of sorts, and so was Albert Schweitzer; so was Jesus Christ. In this view, then, the only acceptable purposes are mediocre purposes.

If we dig a little deeper, however, we recognize that this view cannot really distinguish between those who are fanatical and those who are not. By what standard do we judge something to be extreme? Is devoting yourself to a single purpose extreme? If

so, devoting yourself to many purposes seems to be the opposite extreme.

In the final analysis, the view of self-creation falls flat because it cannot answer a probing question: what is the purpose of the purpose? Dan might decide to make a purpose for his life by becoming a doctor and healing patients. His life revolves around this goal. He studies medicine; he begins a practice; he helps many patients. This goal gives meaning to various aspects of his life. Why is he studying? To heal patients. Why is he getting a job? To heal patients. Why is he talking to this patient right now? So that he can help her. Dan does what he does so that he can be a good doctor and heal patients. But what is the point of that? What is the purpose of his purpose? An end gives meaning to those things that are ordered to the end. It does not give meaning to itself. Dan's purpose of healing gives meaning to his acts of studying, starting a practice, and so on. It cannot give meaning to itself.

Perhaps it has meaning by itself. That answer might work, but not for the view under consideration. In this vision of human purpose, nothing has meaning by itself; we must give it meaning. Dan gives meaning to many of his actions by setting the goal of healing patients. The same goal cannot give meaning to the goal itself. And if the goal has no inherent meaning, then it is not clear how the actions ordered to the goal have any meaning.

What most of us (but not necessarily the advocates of this view) would consider to be an evil purpose—such as the purpose pursued by Hitler—is a very concrete way of making the same point. Dan has chosen to be a good doctor. Instead, he might have chosen to be a good thief. This latter goal could give meaning to many of his actions, such as breaking through doors, walking stealthily, even having conversations with wealthy people to gain information. But what is the point of being a thief?

Does it have meaning in itself? Certainly not according to the view of self-creation. In this view, nothing has meaning unless we give it meaning. We give meaning by setting goals, but the goal itself is left without meaning.

By being a doctor, someone might object, Dan does good for other people, while by being a thief, he would harm other people. The point is well taken. Nevertheless, it has no bearing upon the view of self-creation. This view cannot distinguish between helping and harming others; it cannot judge that one is better than the other. What is good about helping others? What is wrong about harming them? Nothing has meaning—in this view—unless we give it meaning. By itself, helping others has no meaning. By itself, harming others is just as meaningful as anything else.

Indeed, the very idea that some things are good and other things harmful can find no stability in the view of self-creation. On what basis do we claim that some things are good? Recall (from chapter 13) that we recognize the good in the fulfillment or realization of some purpose or function. A good eye, for instance, fulfills the purpose or function of seeing. Only where we find a function, then, can we find the good. But if every human purpose or function is created through our own assertions, then we cannot discover any good independent of our own setting of goals. Nothing is good or bad in itself. It follows that even the good of others must be defined by the goals we set. Dan could just as well have declared that torture is good for others; he would then intend to give meaning to his life by becoming a good torturer.

A RECEIVED PURPOSE

Thomas rejects the self-creation of purpose. We do not make our own purposes. Rather, we receive purpose from something

beyond ourselves.¹ We have no difficulty recognizing purposes in the artifacts we make because we give purpose to them. Pens are for writing, cars for transportation, and saws for cutting. These things have purpose not because they make purpose for themselves. Rather, we give them purpose. We do not, however, give purpose to our own lives. Rather, purpose is given to our lives, even as purpose is given to artifacts.²

The first view—that human life has no purpose—is correct to this extent: if we are nothing more than cosmic accidents, then we have no purpose. Nothing we do—no choice we make—can change that bleak appraisal. All the goals we set, all the pleasure we pursue, and all the good we do, must remain meaningless. Choice has no magic power to create purpose. Purpose must be discovered; once discovered, we can choose either to live out that purpose or to reject it.

Just as we make artifacts for a purpose, so also we are made for a purpose. We are not cosmic accidents. Rather, we are intended; we are planned; we are formed and shaped with a purpose in mind. Meaning, then, is given to our lives. If there were no God who created us with a purpose, then our lives would have no purpose and they could be given no purpose. We would be merely chunks of matter flying about the universe. Fortunately, we need not accept this dark vision. There is a God. We are made for a purpose.

We are given a purpose, but we are also given free choice by which we can choose to accept or reject this purpose. We can live out this purpose or we can rebel against it. We are not mere puppets; rather, we are free agents. Still, if we rebel against our purpose, we leave ourselves empty, without meaning.

Some people find it demeaning to suppose that we are giv-

1. *ST*, I-II, q. 1, a. 5.

2. *ST*, I, q. 103, a. 1; I-II, q. 3, a. 8.

en purpose from another. It makes us, they claim, mere tools or instruments, slaves for someone else's goals. We give purpose to pens, cars, and lawnmowers, and then we proceed to use these things for our own goals. They are nothing more than tools. Likewise, if God has made us for some purpose, then we are mere tools. It is better, so the argument goes, to live independently, without purpose, than to live the life of a slave with purpose.

This argument rests upon a mistaken supposition. Every purpose that is given, the argument supposes, is an instrumental purpose; a purpose received from another must be a purpose to bring about some goal, as a pen brings about writing.

This supposition has some truth to it. Many received purposes are indeed instrumental purposes. Does it follow that *every* given purpose is instrumental? Or is it possible that sometimes a purpose may be given not simply to produce some good? Is it possible that a received purpose might be for the sake of sharing in some good? The members of a baseball team are given diverse purposes that they must fulfill. Are their purposes merely instrumental? Rather, it seems, they are given purpose so that they might share in the good of playing well. The members of an orchestra are given a purpose (to play a certain part) not simply to produce music; they are given a purpose so that they might share in the good of playing music together with others.

When God creates, says Thomas, he seeks nothing for himself.³ He cannot. He already possesses all good in himself. While we make tools because we hope to gain something from the tools, God never hopes to gain something from his creatures. He has nothing to gain. When he creates, then, he does so because he wishes to share his good with others.⁴ He does not make mere

3. SCG, bk. 3, c. 18, ¶4.

4. SCG, bk. 3, c. 18, ¶5.

instruments for his own good. He makes persons who can share in his good.

How can creatures share in the divine good? They cannot get a chunk of it; rather, they can share in the divine good by reflecting it.⁵ Just as a painting of a beautiful landscape shares in the beauty of the original, so we can share in the divine good by being like God. All of creation reflects God in some way or other. Rocks and other inanimate materials, for example, exist and have some causal powers. Living things, however, more profoundly reflect the divine good. They act upon themselves, and they reflect the divine eternity by living on in the species. Animals more clearly yet reflect the divine good, for they are aware of the world around them, even as God is aware. Only human beings, however, reflect God in the most profound sense.⁶ Like God, we can understand the truth; like God, we can love others for their own sake. We can, in our limited way, understand God himself; we can love God himself. Like God, we have an element within us that is eternal. In some manner, then, human beings are an image of the divine.

In short, when giving purpose, God is unlike human beings. We give purpose to artifacts only so that we might use those artifacts to fulfill our own goals. In contrast, God creates so that creatures might share in his goodness. When we are given purpose by God, then, we are not made into mere tools. Rather, we become able to share in God's good.

Furthermore, the purpose we receive from God is unlike the purposes we give to artifacts. When we make artifacts, we attribute purposes to them. We say that a pen is for the sake of writing or a knife is for the sake of cutting. The knife, however, is nothing other than metal shaped in a certain way. Giving shape

5. SCG, bk. 3, c. 19; ST, I, q. 6, a. 1, ad 2.

6. SCG, bk. 3, c. 25.

does not really give purpose to the metal. The purpose is actually in us, and we attribute it to the knife.

In contrast, when God creates, he instills purpose into things.⁷ Within the very nature of things, God instills their movement to some goal. This movement is realized in the powers found in the world. Chemicals react with one another, trees grow, tigers perceive and hunt deer, and human beings investigate the fundamental forces in the universe. These diverse movements arise because physical realities by their nature are propelled to some goal, which has been instilled in them by God. The smallest subatomic particles move or spin, attract or repel, only because they have the spark of God within them. They have a nature by which they move in some regular fashion.⁸

A DISCOVERED PURPOSE

The human mind has the capacity to discover the purposes instilled in things, that is, it has the capacity to discover the ends to which things move by their nature. By observing the activities of things, we observe that they move according to regular patterns, moving consistently to certain end states. We observe inanimate bodies, for instance, moving regularly according to the force of gravity or according to electromagnetic forces. We observe living bodies moving to the ends of growth, of maintenance, and of reproduction. In short, we observe that natural things move regularly to certain ends.⁹

We thereby discover the natures of these things, that is, we discover their fundamental make-up. We know substances by way of their activities, and we know their activities as moving to

7. *ST*, I, q. 103, a. 1, ad 3.

8. *ST*, I-II, q. 26, a. 1; I, q. 80, a. 1.

9. *ST*, I, q. 2, a. 3.

some endpoint. By discovering the endpoint, then, we come to understand the natures within the substances.

Thomas thinks that we can discover our human nature as well. We can discover that we, as human beings, have the power of sensation by which we become like some object while still remaining distinct from the object. We can discover that we have the power of imagination or the power of memory. We can discover that we have emotions. We can discover that we have the power to recognize the natures of things, pulled apart from the details of the individuals in which these natures exist, and the power to reason from one idea to another. We can discover that we have an entirely immaterial desiring power by which we can love more profoundly than any animal.¹⁰

Within our own nature we discover the purpose that God has planted there. These powers of growing, reproducing, sensing, imagining, reasoning, and desiring indicate diverse movements or inclinations within us, movements that are not merely the movements of subatomic particles. Through our power of knowing, for instance, we are inclined to the immanent activity of knowing, an activity not found in inanimate nature. These movements to new ends do not emerge serendipitously through complex arrangements. Rather, they are something entirely new to our nature, arising not from physical particles but from substantial form. At the heart of our nature is a movement toward the goals of these many powers. This movement arises from our substantial form; it arises from our very nature, from that by which we are what we are.

In some sense, we find diverse purposes within ourselves, for we find multiple powers with diverse ends. Still, Thomas thinks that we can discover our one *single* purpose. If we are indeed a unified being, then we must have a unified purpose. We cannot

10. *ST*, I, q. 87, a. 4.

be simply a collection of powers that move us in different directions to diverse goals. Rather, we must be ordered to a single goal.¹¹

A car is a complex machine with many diverse capacities. It has doors that can open and close. It may have air-conditioning or heating, it may have a stereo system, and so on. Despite this diversity, we make cars as unified artifacts. We order all these diverse capacities to one goal, namely, to transportation. Some of these capacities are necessary for transportation, others make transportation more pleasant, but all are for the sake of transportation. Likewise, a human being is a complex organism with many diverse capacities. It can grow, reproduce, sense, remember, desire, and reason. Despite this diversity, a human being is a single organism. All our diverse capacities have a single purpose.

THE HUMAN PURPOSE

What is this purpose? Ultimately, thinks Thomas, the human purpose is to know God.¹² By knowing him, we share in his good, both because we, like him, are able to know, and because it is in the very act of knowing that we grasp him. When we know a tree, we in some manner capture the tree in our minds; likewise, when we know God, we attain him in some limited manner.

All else within us is directed to this one purpose.¹³ We have imagination because our reason requires phantasms from which we abstract the common features of things. Since we have imagination, then we must also have external senses, which can grasp the world and pass on what they know to the imagination. Since we have senses and imagination, then we must have bodies, for

11. *ST*, I-II, q. 1, a. 5.

12. *ST*, I-II, q. 3, a. 8.

13. *SCG*, bk. 3, c. 37, ¶7.

both these powers are bodily powers. Our bodies cannot be simple but must involve the complex arrangements needed to support sensation and imagination. Our bodies, then, must be living bodies. As such, we must have the powers to grow, maintain, and reproduce. If we are to act upon these powers—and if we are to know the expansive world around us—we must have the ability to move about. If our movements are not random but have direction, then we must have the ability to direct our movements to certain desirable goals, that is, we must have emotional desires. If we have complex emotions, then we must have an estimative power and a memory. In short, we are not haphazard collections of powers. We are wonderfully made.

With our reason comes another desiring power, the desire of the will, without which we could not truly share in the divine good. With our reason we can know God, but only with our will can we possess him *as good*. Reason knows existence, but the will loves the good. Reason, says Thomas, captures the world and brings it into our minds; the will reaches out to the world. Indeed, the will reaches out to God, touching the goodness in him.

We have said that the human good is a sharing in the divine good. Nevertheless, we as human beings are prone to view our good as solitary and individualistic. We might suppose, for instance, that if we know God, then we have our own separate share of the divine good within us. This possession might appear solitary, something we have by ourselves alone, independently of anyone else. If we leave it as solitary, however, then we do not truly possess the good, or at least we do not fully possess it. When we have a good, we wish to share it with others, and when our friends have a good, we wish to have it with them.

The human good was never meant to be an isolated good. Our very neediness teaches us this truth. It would be rash to believe that we can attain to knowledge by ourselves, whether that

be knowledge of the world around us or knowledge of God. Just as a member of an orchestra cannot play symphonic music by himself, so no human being can attain knowledge by himself. The good of the orchestra member is not his own private good. The good is possessed only as shared, together with others. Likewise, the human good is not solitary. It is possessed only together with others.¹⁴ Knowing God is a cooperative project.

When Louis seeks “his good,” then, he does not seek a solitary good. His good is the good of others. By seeking to help Clare, Louis does not thereby seek an alien good. He is still seeking his good. When he seeks Clare’s good, he seeks “our” good, a good possessed by Louis and Clare together.

With the will, and with the will alone, we can stretch beyond ourselves and reach out to the good in others. We have seen that the will is a loving power. This love includes not only the love of acquiring various goods. It also includes what Thomas calls the love of friendship, that is, the love of others for their own sakes.¹⁵ Human beings—with their wills—can love others as sharing in the good. Louis, for instance, can love the good of Clare for Clare’s sake. Louis seeks a single good that is both his good and Clare’s good, a good shared between them. When we love others, then, we love them not as isolated beings. We love them by uniting ourselves with them.

The human good is a good shared with others. Just as the members of an orchestra must unite with one another to attain the good of playing symphonic music, so human beings must unite with one another to attain the shared human good. The human good, then, is not limited to a single individual. Indeed, it is not limited to the human community. We must stretch beyond even our fellow human beings; we must stretch to the di-

14. *ST*, I-II, q. 4, a. 8.

15. *ST*, I-II, q. 26, a. 4.

vine good. Our shared good is precisely a sharing in the divine good.¹⁶ Our good, then, is not truly realized in ourselves. It is ultimately realized in God. God is good, and we can hope to share in his good. In comparison, nothing else is truly worthy of our pursuit. With the will, we reach out to God, loving his goodness in himself. With the will, we thereby touch our own good.

God has offered us a sharing in his good. We can fulfill this divine purpose by knowing and loving God. On the other hand, we can rebel against our purpose by pursuing other false goods in place of God. We can pursue bodily pleasures, material riches, power, and fame. In short, we can pursue a host of worldly goods, goods that will not fulfill the purpose embedded within us.

In the end, these goods will never satisfy us.¹⁷ They will leave us empty and alone, offering only a small consolation: our good—we can comfort ourselves—is simply our good. In rebellion, we tell ourselves that we do not have to rely upon the divine good. In rebellion, we tell ourselves that we do not have to stretch beyond ourselves to touch another good. In rebellion, we tell ourselves that we do not have to admit that we, as limited beings, must depend on the good of others. We can, instead, delude ourselves into believing that we have made a good all for ourselves.

In our investigations, we have discovered that human beings are in some manner divine. With the powers of reason and will, we participate in God's knowledge and love. We know, like God, the true natures of things. More importantly, we can come to know God himself. As such, we share a small sliver of his inner life. With our will, we can love the true good precisely as it is good. We love not only our own good but also the good of others. Most profoundly, we can love God himself. We can be pleased with his good and seek a share in that good for ourselves and for

16. *ST*, I-II, q. 109, a. 3; II-II, q. 26, a. 3.

17. *ST*, I-II, q. 2.

others. Like God, we have powers that are entirely immaterial. As such, we are best described as embodied spiritual beings. Our life and our good are not merely bodily. They reside, with God, in a higher realm. God has offered us a share in his very life. Yet, he has also given us the power to choose, to accept or reject. We can reach out to him in knowledge and love, or we can pursue the passing phantoms of this world. Let us choose wisely.

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