

Part II

Philosophy of Nature, Philosophy of the Soul, Metaphysics

Introduction

This part comprises selections that pertain to the second main philosophical discipline in Augustine's division, which in the *Dialectica Monacensis* (selection number 2) comprehends all "real sciences," i.e., all disciplines that theoretically study the nature of reality, as opposed to the self-reflective/regulative study of the operations of reason in logic, and to the practical/normative considerations in ethics.

Accordingly, the first section contains selections that present the generally presumed conceptual framework for studying the nature of reality in medieval philosophy, namely, Aristotelian hylomorphism, and the discussion of some important problems related to this general framework in connection with natural philosophy. The selections of the second section deal with the nature of the human soul, an entity of particular importance, not only because it constitutes our nature, but also because of its peculiar place in the overall scheme of reality, situated as it is on the (presumed) borderline between material and immaterial reality. The selections of the third section deal with this overall scheme of reality, as it is the proper subject of the most universal metaphysical considerations. Finally, the selections of the last section deal specifically with what we can know by natural reason about the origin and end of this reality, i.e., the existence and nature of God.

The first selection of the first section is the complete text of Aquinas' *De Principiis Naturae* ("On the Principles of Nature"). This short treatise provides an ideal introduction to the basic concepts and principles of Aristotelian hylomorphist metaphysics and philosophy of nature. Besides its obvious virtues of succinctness and clarity, what is truly remarkable about Aquinas's presentation is that it makes quite clear how the principles and conceptual distinctions introduced here are generally applicable regardless of our particular scientific, physical explanations of the phenomena that we think instantiate them. For example, it is always universally true that a substantial change results in the ceasing to be of one thing and the coming to be of another, whereas in an accidental change the same thing persists, only in a different state than it was before the change.

The universal applicability of the conceptual apparatus developed here renders it a powerful tool in the analysis of all sorts of natural phenomena regardless of our theories

concerning the particular mechanisms that account for those phenomena. For the level of generality in these considerations concerns any possible natural change and its conditions as such, abstracting precisely from the particular mechanisms that account for the specific characteristics of this or that phenomenon. This is the reason why Aquinas's solution to a problem of Aristotelian natural philosophy presented in the next selection (concerning the presence of elements in mixed bodies or what we would call compounds) is equally applicable whether we take the elements in question to be the four Aristotelian elements or the elements of the modern Periodic Table. Indeed, this is also why the same conceptual apparatus is equally applicable to phenomena we still do not understand in detail, such as psychological phenomena.

However, this apparently unlimited universal applicability of these principles invites their application to phenomena concerning which religious doctrine makes some explicit claims, such as the creation of the world *ex nihilo* (from nothing), or the possibility of various miracles by divine omnipotence that are apparently excluded by the principles of Aristotelian metaphysics and natural philosophy. This inevitably leads to the conflicts between Aristotelian philosophy and religious dogma cataloged in the next selection, which come from *De Erroribus Philosophorum* ("The Errors of Philosophers") dubiously attributed to Aquinas' student, Giles of Rome. Whether or not it is the authentic work of Giles, the systematic presentation, useful summaries of the main doctrinal points criticized, and their reduction to their principles make this short treatise a particularly useful source for studying the doctrinal conflicts of the period. The selection in this volume only reproduces the critique of Aristotle, Avicenna, and Averroes (although the complete work also deals with Algazel, Alkindi, and Maimonides).

However, the most important document of the "official reaction" to these conflicts is still the text of the 1277 Paris Condemnation, reproduced in part in the next selection. As has already been indicated in the General Introduction, the sweeping Condemnation primarily targeted the radical Aristotelianism of the Latin Averroists, but it also touched on some of the theses of Aquinas, especially those connected to his conception of matter as the principle of individuation. The relevant theses of the Condemnation are indicated by an 'A' added to their number in the present selection.

By the late medieval period, Aristotelian physics came to be criticized for more than only theological or arcane metaphysical reasons. The last selection of this section presents Buridan's criticism of the Aristotelian principle that motion requires the activity of an actual mover, which does not appear to be the case in the motion of projectiles (i.e., in cases that we would characterize in modern physics as *inertial motion*). Buridan produces a barrage of arguments against Aristotle's own solution to the problem (provided in terms of the motion of the surrounding air), based on keen observation and careful reasoning. Buridan's own solution, in terms of the postulation of an impressed force, the so-called *impetus*, proved to be enormously influential, up until Galileo's time. Although this seems to be just a particular problem for Aristotelian physics, Buridan's solution has far-reaching implications for metaphysics and natural theology. For if motion can be present without an actual mover (as is clearly the case if its *impetus* can move a body long after the mover has let it go), then the existence of motion in the universe cannot provide evidence for the actual existence and activity of the ultimate source of this motion. Therefore, Buridan's *impetus* theory poses a serious challenge to the Aristotelian argument for the existence of a prime mover, adapted by many (indeed, practically all) thirteenth-century theologians and philosophers for proving the existence of God.

The selections of the second section deal with human nature and the human soul. The brief selections from Augustine are meant to illustrate his Platonic conception of human nature, according to which a human person is nothing but a soul ruling a human body. That the soul and body are two distinct entities and a human being is a composite of the two is not something Augustine feels the need to argue for. As a result, he has to deal with something like the modern, post-Cartesian “interaction problem,” the problem of how the material body can act on the immaterial soul (in sense perception), and how the immaterial soul can act on the material body (in voluntary action). It is quite telling, however, that Augustine only has the first half of this problem: what he finds problematic is the body’s action on the soul; the soul’s ability to move the body is not an issue for him. The reason is that he does not have among his assumptions the idea of the causal closure of a (mechanistic) physical universe usually assumed in post-Cartesian thought. After all, for him all physical phenomena are just manifestations of God’s continuous creative and sustaining activity, and so, just as God rules the material world in the macrocosm of nature, so does the soul rule its body in the microcosm of human nature. Thus, voluntary acts are just manifestations of the soul’s power to move the body, just as the movement of the heavenly bodies is a manifestation of God’s power to move the entire universe. But perception poses a problem precisely because of this conception of causality in terms of ruling or dominance. For that which is subordinate in this asymmetrical relation cannot affect that which dominates it. Augustine’s solution in terms of the soul’s attention required by the resistance of the body to its rule quite elegantly deals with this problem, but his rather skeletal conception leaves a great deal unanswered. So it is no wonder that after the arrival of Aristotle’s detailed and sophisticated theory of the soul in general and of the human soul in particular, Augustine’s conception exerted a somewhat oblique influence within a generally Aristotelian conceptual framework, in the form of Augustinian theologians’ endorsement of the idea of a plurality of substantial forms in the same individual (i.e., the doctrine that the same individual substance has several substantial forms; say, in a human person there would be a form accounting for her corporeal features, such as being extended in space, another one accounting for her vegetative functions, a vegetative or nutritive soul, another accounting for her sensitive functions, a sensitive soul, and yet another accounting for her rationality, a rational soul, although some authors would take only two or three of these to be really distinct from each other).

In the Aristotelian framework, the soul (in Latin, *anima*) is simply the principle of life: that which *animates* any living – that is, *animate* – being. So the soul is that on account of which a living being is alive. And since for a living being to live is for it to be, absolutely speaking, to have its substantial being, and since that on account of which something has its substantial being is its substantial form, it follows that the soul of a living being is its substantial form. Note how this conception can get around the “interaction problem”: since the soul and body are not two distinct entities acting on each other, but are rather the essential, integral parts of primary substances (which are the primary agents in causal relations), the question is not what sort of causal mechanisms can account for the interaction between body and soul; rather, the question will be what sort of causal powers living bodies informed by their peculiar substantial forms must have in order to perform their vital functions. So, plant-souls obviously need to have powers for nutrition, growth, and self-reproduction, more developed brute animal souls must have in addition powers of perception, memory, and imagination, and, finally, rational human souls must possess in addition the rational powers of intellect and will. However, this picture raises a peculiar problem in connection with the

rational soul in particular: the nature of the intellect, which enables human beings informed by this sort of soul to perform the specific human activity of thinking.

Aristotle, in his *De Anima* (“On the Soul”), argued that thinking is simply not the kind of activity that can take place in a material medium: given that the intellect is able to think all material natures, the intellect itself cannot have a material nature, for otherwise its material nature would prevent it from thinking any other material nature, in the way any color in the eye itself would prevent it from seeing any other colors.¹

To be sure, medieval philosophers and theologians certainly welcomed this conclusion, along with the further conclusion that the intellect is therefore immortal, for if the intellect is immaterial, then it is naturally capable of surviving the death (i.e., the disintegration of the material organization) of the body. But then the inevitable question is just how this immaterial intellect is related to the material body, indeed, to the material substantial form of this body, the rational soul.

The following selections from Averroës and Siger of Brabant, respectively, address this issue in the manner already indicated in the General Introduction. Accepting Aristotle’s conclusion about the immateriality of the intellect, Averroës and Siger conclude that it cannot be a form inherent in matter; so, it must be a subsistent form (a form for which to be is not for it to inform matter); therefore, it must be a separate substance. Indeed, if the intellect is a form existing separately from matter, then, given the Aristotelian conception of individuation (according to which distinct instances of specifically the same form can only be distinct on account of the distinct parcels of matter they inform), it follows that there can be only one separate intellect shared by all humans. This conception, of course, raises a host of philosophical and theological problems, which invited both the official censure of the several condemnations mentioned in the General Introduction, and the severe philosophical and theological criticisms of the Averroistic position. One of the main critics was Aquinas, who, in the last question of selection number 27, provides precisely the sort of argument that Siger at the end of the previous selection admits he has no answer for.

But Aquinas was also treading a fine line in his own solution to the problem. Rejecting the Augustinian thesis of the plurality of substantial forms as metaphysically untenable (because, he argued in accordance with the doctrine of his *De Principiis Naturae* (“On the Principles of Nature”), a substantial form makes a thing actually existent absolutely speaking, and so any other form the thing can have can only be its accident making it actual in some respect), Aquinas has to say that the intellective soul is *both* the substantial form of the body *and* a subsistent entity, having its own operation in which it does not communicate with the body. But how is this possible? After all, if the human soul is the form of the body, then it is a material form: for it to be *is* for it to inform matter. On the other hand, if it is a subsistent form, then it has to be an immaterial form: for it to be *is not* for it to inform matter. Can there possibly be a middle ground between these apparently diametrically opposed characterizations? The answer is yes, if we consider that it is quite possible for the soul to have the same act of being that is the being of the body (and which is the same as the life of a living human being) as long as the soul informs the body, and to retain this same act

1 For a detailed discussion of this argument, along with another argument for the immateriality of the intellect in Aquinas, see G. Klima, “Aquinas’s Proofs of the Immateriality of the Intellect from the Universality of Thought,” *Proceedings of the Society for Medieval Logic and Metaphysics*, <<http://www.fordham.edu/gsas/phil/klima/SMLM/PSMLM1.pdf>>, 1 (2001), pp. 19–28. See also Robert Pasnau’s comments and a rejoinder in the same volume, pp. 29–36 and pp. 37–44, respectively.

of being after its separation from the body, provided we allow the possibility that the being of the soul is merely contingently, but not necessarily, identical with the being of the body. But Aquinas' arguments from the proper, immaterial operation of the intellective soul are designed to establish precisely this conclusion, namely, that the existence that the soul has in the body is also the existence that properly belongs to the soul itself, whence the soul *can* have this same act of existence whether in or without the body.

It is the same position that is defended by John Buridan in the question presented here from his questions on Aristotle's *De Anima*. The important difference between Aquinas' and Buridan's approaches, however, is that Buridan takes this position to be established by faith alone.²

The selections of the next section present a sampling of general metaphysical considerations, which prepare the ground for the selections of the last section in this part, which deal with God's existence and what is supposed to be knowable about God by reason alone.

The brief selections from Avicenna are those passages that spelled out the most fundamental idea for practically all medieval thinkers in thirteenth-century metaphysics: the moderate realist conception of how common natures exist individuated both in the particulars that instantiate them and in the individual minds that can nevertheless comprehend them in abstraction from their individuating conditions. Acknowledging the formal unity of these instances (both in the mind and in the particulars) of the same common nature, without, however, ascribing independent existence and numerical unity to this nature, is nothing but the affirmation of the idea of "pervasive formal unity" discussed in the General Introduction.

It is this fundamental idea, among other things, that is articulated in careful detail in Aquinas' "metaphysical gem," his *De Ente et Essentia* ("On Being and Essence"), reproduced here in full. Aquinas' succinct, yet comprehensive, discussion takes us through his entire metaphysical system. Of particular importance are his discussions of the various sorts of metaphysical composition in created substances, contrasted with the absolute simplicity of God, his lucid exposition of Avicenna's idea of common nature in its absolute consideration and as it exists in singular substances and singular minds, and, especially, his famous arguments for the real distinction of essence and existence in creatures and the real identity of the same in God.

The importance of this idea will be evident in connection with the selections of the last section of this part, dealing with proving the existence of God, and spelling out the infinite differences between God and His creatures. So, the last selection of this section, presenting Buridan's arguments for the real identity of essence and existence also in creatures (an idea already present in the thirteenth century, in Siger of Brabant, Godfrey of Fontaines, and Henry of Ghent, among others), quite clearly indicates the sort of metaphysical challenges Aquinas' conception has to face in a different conceptual framework that would *not* spell out the distinction between Creator and creatures in terms of Aquinas' thesis of the real distinction of essence and existence in creatures.

The first short selection of the last section, from Augustine's *De Trinitate* ("On Trinity"), illustrates Augustine's conception of divine simplicity and presents his solution to the

2 For an excellent, thorough discussion of the finer details of Buridan's position see J. Zupko, "On Buridan's Alleged Alexandrianism: Heterodoxy and Natural Philosophy in Fourteenth-Century Paris," *Vivarium* 42/1 (2004), pp. 42–57.

problem of how certain predications can come to be and cease to be true of God without His change (which is excluded by His simplicity).

The next set of selections presents Anselm's arguments concerning the existence and nature of God, from both his *Monologion* and his *Proslogion*, along with selections from his debate with Gaunilo over the latter argument.

Finally, the last set of selections from Aquinas's *Summa Theologiae* presents some key texts from his natural theology concerning the provability of God's existence (containing his criticism of Anselm's approach), his actual proofs of God's existence, and some of his considerations concerning how we can meaningfully talk about God, despite despite our inability to comprehend His essence.

There is a sharp contrast between Aquinas' and Anselm's approaches to the same issues, despite some fundamental agreements between them. Aquinas finds Anselm's *a priori* approach in his *Proslogion* unpersuasive, because he clearly sees, just as Gaunilo did, that the mere linguistic understanding of Anselm's description of God as that than which nothing greater can be conceived cannot provide a logical short-cut to the requisite conception of God without which Anselm's reasoning cannot work.³ Thus, Aquinas opted for his *a posteriori* approach, which, however, is very intimately tied to his Aristotelian physical and metaphysical principles that can be open to attack from many different angles, especially from different conceptual frameworks.

Nevertheless, the fundamental idea of these arguments is still quite appealing to many philosophers who have seriously engaged with Aquinas' thought. For if anything and everything in the world depends for its existence on something, and everything in the world is just a receiver, transformer, and transmitter of the energy needed for its own sustenance and for the sustenance of those it sustains, then it seems a plausible idea that anything in this world can exist only if there is a genuine, ultimate source of this energy, which itself does not need any sustenance, and which, therefore, is not something in this world. Aquinas' thesis of the real distinction between the existence and essence of creatures and the identity of the same in God was devised precisely to provide the metaphysical grounds for this idea, the idea of the radical dependency of everything in this world for its existence on something that cannot be a thing in this world.

3 For a detailed analysis of Anselm's argument and Aquinas's reaction along these lines, see G. Klima, "Saint Anselm's Proof," in G. Hintikka (ed.), *Medieval Philosophy and Modern Times* (Dordrecht: Kluwer Academic Publishers, 2000), pp. 69–88.

Hylomorphism, Causality, Natural Philosophy

19

Thomas Aquinas on the Principles of Nature

Chapter 1

Note that something can be, even if it is not, while something [simply] is. That which [only] can be [but is not] is said to be in potentiality, whereas that which already exists is said to be in actuality. But there are two kinds of being. There is the essential or substantial being of the thing, as for a man to be, and this is just *to be*, without any qualification. The other kind of being is accidental being, as for a man to be white, and this is [not just *to be*, but] *to be somehow*.¹

It is with respect to both kinds of being that something is in potentiality. For something is in potentiality toward being a man, as the sperm and the menstrual blood; and something is in potentiality toward being white, as a man. Both that which is in potentiality in respect of substantial being and that which is in potentiality in respect of accidental being can be said to be matter, as the sperm can be said to be the matter of man and the man the matter of whiteness. But they differ in that the matter that is in potentiality in respect of substantial being is called matter *from* which [something is made – *materia ex qua*], while that which is in potentiality in respect of accidental being is called matter *of* which [something is made – *materia in qua*].²

1 The contrast in the Latin is that between *esse*, to be, absolutely speaking, and *esse aliquid*, literally, to be something. But since Aquinas' point here is the contrast between the substantial being of a thing on account of which it exists as a substance of some kind and its accidental being on account of which it is in a way, say, as being of such and such a shape, size, color, etc., the idea is better brought out in English by contrasting being absolutely with being somehow.

2 The literal rendering of the distinction in Latin (between *materia ex qua* and *in qua*, i.e., matter “from which” and “in which” something is made, respectively) would not be as helpful as the existing English distinction between matter that a thing is “made *from*” and matter that it is “made *of*.” The former member of the existing distinctions in both languages indicates the transient matter of a thing, that *from* which it is made through some substantial transformation of this matter. This is how we say that bread is made *from* flour. But we cannot say that the bread is made *of* flour. The latter construction indicates the permanent matter of the thing, which is actually present in the constitution of the thing as long as the thing exists. This is how we say that a statue is made *of* bronze (but, again, a bronze statue is made *from* tin and copper).

Again, properly speaking, what is in potentiality toward accidental being is called a subject, while that which is in potentiality toward substantial being is properly called matter. And it is significant that what is in potentiality toward accidental being is called a subject, for we say that an accident is in a subject, while of a substantial form we do not say that it is in a subject.³

So, matter differs from subject in that a subject does not have being from what comes to it, as it has complete being in itself. For example, a man does not have his being [absolutely speaking] from his whiteness. Matter, however, does have its being from what comes to it, for matter in itself does not have complete being, but incomplete [i.e., merely potential] being. Therefore, form gives being to matter, absolutely speaking, but the subject gives being to the accident, even if sometimes one term is taken for the other, i.e. “matter” for “subject,” and *vice versa*.

Again, just as everything that is in potentiality can be called matter, so everything from which something has being, whether accidental or substantial being, can be called a form; just as a man, who is white in potentiality, will be actually white on account of whiteness, and the sperm, which is a man in potentiality, will be actually a man on account of the soul. And since form makes something actual, form is also called actuality. That which makes something actual in accidental being is accidental form, and that which makes something actual in substantial being is substantial form.

Since generation is motion toward form, to these two kinds of form there correspond two kinds of generation: to substantial form there corresponds generation absolutely speaking, while to accidental form there corresponds generation with qualification. For when the substantial form is introduced, something is said to come to be, without further qualification. But when an accidental form is introduced, we do not say that something comes to be, without qualification, but that something comes to be this; just as when a man becomes white, we do not say that he comes to be, absolutely speaking, but that he comes to be white. And to these two kinds of generation there correspond two kinds of corruption, namely corruption in an absolute sense, and corruption with qualification. Generation and corruption absolutely speaking are only in the category of substance, while those with qualification are in the other categories.⁴

3 This is an allusion to Aristotle’s doctrine in the *Categories*, where he distinguishes substance and accident in terms of *not being in* or *being in* a subject. Aquinas’ point here is that strictly speaking it is only an accident that can be said to be in a subject, namely, in an actually existing substance that has its actual substantial being whether it actually has this accident or not. A substantial form, by contrast, cannot exist in a subject in this strict sense, for what it informs cannot have actual substantial existence without this form, since it has this actual existence precisely on account of actually having this form. Accordingly, a substantial form is not an accident, although it is not a complete substance either: it is a substantial part of a complete substance, along with the matter of this substance it informs.

4 Again, this is an allusion to Aristotle’s doctrine of the *Categories*. Substantial change takes place only in the category of substance, i.e., with respect to substantial forms signified by terms falling into the logical category of substance. Accidental changes take place with respect to accidental forms signified by terms classified under one or the other of the categories of accidents. In his *Physics*, Aristotle also argues that primarily there is accidental change only in the categories of quantity (augmentation or diminution), quality (alteration), and place (locomotion). All other accidental changes take place on account of these primary changes: for example, the relational changes of becoming unequal or dissimilar obviously take place on account of the quantitative or qualitative change in one or the other of the things that started out as equal or similar.

And since generation is a kind of mutation from non-being into being, and corruption, conversely, should be from being to non-being, generation starts not from just any kind of non-being, but from a non-being that is a being in potentiality: for example, a statue is generated from bronze, which can be a statue, but is not actually a statue.

So, for generation three things are required: a being in potentiality, which is matter, non-being in actuality, which is privation, and that by which the thing will be actual, namely form. For example, when, from bronze, a statue is formed, the bronze, which is in potentiality toward the form of the statue, is matter; its shapelessness is called privation; and its shape, on account of which it is called a statue, is its form, though not its substantial form, for the bronze was already actual even before the introduction of this form or shape, and its existence does not depend on this shape, but is an accidental form. For all artificial forms are accidental, because art works only on what is supplied by nature already in complete existence.

Chapter 2

So, there are three principles of nature, namely matter, form, and privation, of which one is *that to which* generation proceeds, namely form, and the other two are *that from which* generation proceeds. Therefore, matter and privation are the same in their subject, but differ in their concepts. For the very same thing that is bronze is shapeless before the advent of the form; but it is for different reasons that it is called bronze and shapeless.

Therefore privation is called a principle not *per se* [on its own account] but *per accidens* [by coincidence], namely, because it coincides with matter, just as we say that this is *per accidens*: the doctor builds a house, for he builds not on account of being a doctor, but as a builder, who happens to be a doctor.

But there are two kinds of accidents: namely necessary [accident], which is not separated from its subject, as risibility⁵ from man, and not necessary [accident], for example, whiteness, which can be separated from man.⁶ Therefore, although privation is a principle *per accidens*, it does not follow that it is not required for generation, because matter is never stripped of privation; for insofar as it is under one form, it has the privation of another and, conversely, as in fire there is the privation of the form of air.⁷

5 “Risibile”: capable of laughter. See “John Buridan on the Predicables” (selection no. 8, n. 1 above).

6 This is an allusion to Porphyry’s doctrine in his *Isagoge*, where he distinguishes inseparable and separable accidents. For although accidents may or may not belong to the same subject without the corruption of that subject according to Porphyry’s definition, some accidents are naturally inseparable from their subjects, although their subjects can be conceived to exist without those accidents (so, in their case the “may” in the Porphyrian definition should be understood as mere logical possibility, as opposed to some genuine natural potentiality).

7 Privation is the *logically necessary* starting point of any coming-to-be (for if the thing already had the opposite form, then it could not *come* to have that form). Yet privation merely coincides with the principle that renders change *naturally possible*, namely, matter. For an amorphous lump of bronze is *able* to become a statute through its own change *not* on account of the fact that it does not have the shape of the statue (for otherwise everything that does not have that shape, say, an angel or the square root of two, would have to be able to do so), but on account of its *natural ability* to take on and preserve that shape. So, the *per se* principle of this change (that on account of which it can occur) is the bronze, which is coincidentally (*per accidens*), but logically necessarily lacking the shape it will take on when it is shaped into a statue.

We should know that even if generation proceeds from non-being, we do not say that its principle is negation, but that it is privation, for a negation does not determine its subject. For that it does not see can [truly] be said also of a non-being, as [when we say that] a chimera does not see, and also of a being that is naturally incapable of having sight, as [when we say that] a rock does not see. But a privation can be said only of a determinate subject, in which the opposite habit is naturally apt to occur, for example, only those things can be said to be blind that are naturally apt to see [but actually lack sight].

And since generation does not proceed from non-being absolutely speaking, but from a non-being in some subject, and not in just any kind of subject, but in a determinate subject (for it is not from just any kind of non-being that fire is generated, but from that kind of non-fire in which the form of fire is apt to come to be), we say that privation is a principle.

But it differs from the others in that the other two are principles both of being and of coming to be. For in order that a statue is generated there has to be bronze, and in the end there has to be the form of the statue, and, further, when the statue already exists, these two also have to exist. However, privation is only the principle of coming to be, but not of being, for while the statue is still coming to be, it is necessary that the statue does not yet exist. For if it already existed, it would not be coming to be, for what is still coming to be does not yet exist, apart from processes. But when the statue already exists, there is no privation of the shape of the statue, for affirmation and negation cannot stand together, and similarly neither can privation and habit.

Again, privation is a principle *per accidens*, as was explained above, and the other two are principles *per se*. From what has been said it is clear, then, that matter differs from form and privation in its concept. For matter is that in which form and privation are thought to be, as it is in the bronze that form and formlessness are thought to be.

Sometimes matter is named with privation, and sometimes without it. For example, the concept of bronze, when it is the matter of the statue, does not imply privation: for when I call something bronze, this does not imply that it is shapeless or formless. On the other hand, the concept of flour does imply the privation of the form of bread, for when I call something flour, this does signify a shapelessness or formlessness opposite to the form of bread.

And since in the process of generation matter or the subject remains, but privation or what is composed of matter and privation does not, that matter which does not imply privation in its concept is permanent, while that matter which does is transient.

We should know that some matter has some form, for example, the bronze, which is matter in respect of the statue, but bronze itself is composed of matter and form; wherefore bronze is not called prime matter, for it has matter. But that matter which is thought of without any kind of form or privation as subject to all forms and privations is called *prime matter*, because there is no other matter before it. And this is also called *hyle*.

Now, since [any] definition and cognition is [obtained] by form, prime matter cannot be cognized or defined in itself, only by comparison, as when we say that prime matter is that which is to all forms and privations as bronze is to the form of the statue and to the lack of this form. And this matter is called prime matter without qualification.

For something can [also] be called *prime matter in respect of a genus*, as water is the prime matter of all liquids. But it is not *prime matter* without qualification, for it is composed of matter and form, so it has matter prior to it.

We have to know that prime matter, as well as form, is not generated (or corrupted), for every generation proceeds to something from something. That *from which* generation proceeds is matter, and that *to which* generation proceeds is form. Therefore, if either

matter or form were generated, then matter would have matter and form would have form, and so on, *in infinitum*. So, properly speaking, only the composite substance is generated.

We also have to know that matter is said to be numerically one in all things. But something is said to be numerically one in two ways. First, that is said to be numerically one which has one determinate form, for example Socrates; but prime matter is not said to be numerically one in this way, for in itself it does not have any form. Second, a thing can also be said to be numerically one because it lacks those dispositions which make things numerically different, and it is in this way that matter is said to be numerically one.

We should know that although matter does not have in its nature some form or privation, as in the concept of bronze neither shape nor the lack of some shape is included; nevertheless, matter is never stripped of form or privation, for sometimes it is under one form, while sometimes it is under another. But it can never exist in itself, because on account of its very concept it does not have any form, whence it does not have actual existence (since something can have actual existence only through its form), but it exists only potentially. So nothing in actual existence can be called prime matter.

Chapter 3

From what has been said it is clear, then, that there are three principles of nature, namely matter, form, and privation. But these three are insufficient for generation, for nothing drives itself into actuality, for example a chunk of bronze, which is in potentiality to become a statue, does not make itself into an actual statue, but it needs an agent that brings out the form of the statue from potentiality to actuality. And the form would not bring itself from potentiality into actuality either (and I am speaking here about the form of the thing being generated, which we call the end of the generation), for the form does not exist until it has come to be, but what is acting is already existing during the process of generation. So, it is necessary to have another principle beside matter and form, namely, something that acts, and this is called the efficient or moving cause, or the agent or the principle of motion. And since, as Aristotle says in the second book of his *Metaphysics*, whatever acts does so only intending something, there has to be also a fourth [principle], namely that which is intended by the agent, and this is called the end.

We have to know, however, that every agent, natural as well as voluntary, intends some end. But from this it does not follow that all agents recognize this end, or deliberate about the end. For to recognize the end is necessary only for those agents whose acts are not determined, but which can have alternatives for [their] action, namely, voluntary agents, who have to recognize their ends by which they determine their actions. However, the actions of natural agents are determined, so it is not necessary that they elect the means to an end. And this is what Avicenna illustrates with his example of the guitar, which need not deliberate the plucking of its strings, as these are determined for it [by the player], for otherwise there would be delays between the single sounds, which would result in dissonance.

Now a voluntary agent rather appears to deliberate than a natural agent. So, [since even a voluntary agent may act without deliberation,] it follows by *locus a maiori*⁸ that it is

8 Aquinas alludes here to a dialectical topic (a form of probable argument discussed by Aristotle in his *Topics*, his logical work on probable reasoning). The *locus a maiori apparentia* (the topic from greater appearance) relies on the following maxim (a general observation that licenses a probable inference): if a thing that is more likely to have an attribute than another does not have it, then the other does

possible for a natural agent to intend some end without deliberation. And this kind of intending an end is nothing, but having a natural inclination toward it.

From what has been said, then, it is clear that there are four kinds of causes, namely, material, efficient, formal, and final. And although the terms “principle” and “cause” can be used interchangeably, as is stated in the fifth book of the *Metaphysics*, in the *Physics* Aristotle distinguished four causes and three principles. For [there] he took causes to comprise both extrinsic and intrinsic ones. Now matter and form are said to be intrinsic to the thing, for they are constituent parts of the thing; but the efficient and the final cause are said to be extrinsic, for they are outside of the thing. But [in this passage of the *Physics*] he took only the intrinsic causes to be principles. On the other hand, privation is not counted among the causes, for privation is a *per accidens* principle, as we said. So, when we speak about the four causes, we mean the *per se* causes, but also *per accidens* causes are reduced to the *per se* ones, for whatever is *per accidens* is reduced to what is *per se*.

But even if in the first book of his *Physics* Aristotle takes intrinsic causes for principles, nevertheless, as he says in the eleventh book of his *Metaphysics*, properly speaking the extrinsic causes are principles and the intrinsic causes that are parts of the thing are elements, and both can be called causes. But sometimes these terms are used interchangeably. For every cause can be called a principle and every principle can be called a cause, though the concept of cause seems to add something to that of principle in its ordinary sense, for whatever is first can be called a principle,⁹ whether there results some existence from it or not. For example, a craftsman can be called the principle [beginning] of a knife, as from his work there results the being of the knife. But when something turns from black to white, then we can say that blackness is the principle [beginning] of this change – and generally speaking everything from which some change begins can be called a principle – still, from this blackness there did not result the being of whiteness. But only that first thing is called a cause from which there follows the being of a posterior thing; so we say that a cause is something from the being of which there follows the being of something else.

For this reason, that first thing from which the motion starts cannot be called a cause *per se*, even if it is a principle, whence privation is counted among principles, but not among causes, for privation is that from which generation starts. But [privation] can also be called a cause *per accidens*, insofar as it coincides with matter, as was explained earlier.

However, only those things are properly called elements that are causes of which the thing is composed, which are properly material, and not just any material causes, but only those of which the thing is primarily composed. We do not say, for example, that his limbs are the elements of a man, for the limbs themselves are also composed of others; but we do say

not have it either. The maxim, therefore, licenses the inference from the lack of an attribute in something that would be more likely to have it, i.e., concerning which there would be a greater appearance (*maior apparentia*) that it would have this attribute, to the lack of the same attribute in something else that is less likely to have it. For example, if a math teacher assigns a problem to his students that even he cannot solve, his students can argue that they should not be expected to solve it, relying on this form of argument. For in this case there is a greater appearance that the teacher should be able to solve the problem, based on his greater knowledge and experience. But if he cannot solve it, then the maxim licenses the conclusion that his students (who are less likely to solve a problem than he is) cannot solve it either. Likewise, if voluntary agents can intend something without deliberation, then involuntary agents can also intend something without deliberation.

9 In its ordinary, common, sense, the Latin word *principium* from which the English word ‘principle’ derives simply denotes the beginning or first member of any series of items.

that earth and water are elements, for these are not composed of other bodies, but it is from them that all natural bodies are primarily composed. Therefore Aristotle in the fifth book of the *Metaphysics* says that an element is something from which a thing is primarily composed, is in the thing, and is not divided according to form.

The first part of this definition, namely, “something from which a thing is primarily composed,” is evident from what has been just said. The second part, namely, “is in the thing,” is put here to distinguish elements from that kind of matter which is totally corrupted in generation. For example, bread is the matter of blood, but blood is not generated, unless the bread from which it is generated passes away; so the bread does not remain in the blood, whence bread cannot be said to be an element of blood. But elements somehow have to remain, since they do not pass away, as it is said in the book *On Coming To Be and Passing Away*. The third part, namely, that an element is not divided according to form, is meant to distinguish an element from those things that have parts different in form, i.e., in species, as, for example, a hand, the parts of which are flesh and bones, which are different in species. But an element is not divided into parts that differ in species, as water, of which every part is water. For it is not required for something to be an element that it should be indivisible in quantity, but it is sufficient, if it is not divisible according to species; but if something is indivisible also in this way, then it is also called an element, as letters are called the elements of expressions. So it is clear that “principle” covers more than “cause,” and “cause” more than “element.” And this is what the Commentator says in commentary on the fifth book of the *Metaphysics*.

Chapter 4

Having seen that there are four genera of causes, we have to know that it is not impossible for the same thing to have several causes, as for a statue, the causes of which are both the bronze and the sculptor, but the sculptor as efficient, while the bronze as its matter. Nor is it impossible for the same thing to be the cause of contraries. For example, the pilot can be the cause both of the salvation and of the sinking of the ship, but of the one by his presence, while of the other by his absence. We also have to know that it is possible that something be both cause and effect in respect of the same thing, but not in the same way: for walking is the cause of health as its efficient, but health is the cause of walking as its end: for we take a walk sometimes for the sake of our health. Again, the body is the matter of the soul, while the soul is the form of the body. Also, the efficient is said to be the cause of the end, for the end comes to be by the operation of the agent, but the end is the cause of the efficient, insofar as the agent operates only for the sake of the end. Whence the efficient is the cause of the thing that is the end, say, health; but it does not cause the end to be the end; as the doctor causes health, but he does not cause health to be the end. On the other hand, the end is not the cause of the thing that is the efficient, but is the cause for the efficient to be efficient: for health does not cause the doctor to be a doctor (and I am speaking about the health that is produced by the operation of the doctor), but it causes the doctor to be efficient, so the end is the cause of the causality of the efficient, for it causes the efficient to be efficient, and similarly, it causes matter to be matter and form to be form, for matter does not receive form, except for the sake of the end, and form does not perfect matter, except for the sake of the end. Whence it is said that the end is the cause of all causes, for it is the cause of the causality of all causes. For matter is said to be the cause of form, insofar as the form exists only in matter; and similarly, form is the cause of matter, insofar as matter

has actual existence only by the form. For matter and form are correlatives, as is said in the second book of *Physics*. They are related to the composite substance, however, as parts and as simple to composite.

But since every cause insofar as it is a cause is naturally prior to its effect, we should know that something is called "prior" in two ways, as Aristotle says in the sixteenth book of his *On Animals*. And on account of this diversity something can be called both prior and posterior in respect of the same thing, and both cause and effect. For something is said to be prior to something else in respect of generation and time, and again, in respect of substance and completion. Now since the operation of nature proceeds from what is imperfect to what is perfect and from what is incomplete to what is complete, what is imperfect is prior to what is perfect in respect of generation and time, but what is perfect is prior in completion. So we can say that a man is prior to a boy in substance and perfection, but the boy is prior to the man in generation and time. But although among generable things that which is imperfect is prior to what is perfect, and potentiality is prior to act (considering the same thing that is imperfect prior to becoming perfect, and is in potentiality prior to becoming actual), nevertheless, absolutely speaking, what is actual and perfect is necessarily prior: for what reduces that which is in potentiality to actuality is in actuality, and what perfects the imperfect, is itself perfect. Now matter is prior to form in generation and time: for that to which something is coming is prior to what is coming to it. Form, however, is prior to matter in perfection, since matter has no complete existence, except by the form. Similarly, the efficient is prior to the end in generation and time, for it is from the efficient that motion starts toward the end. But the end is prior to the efficient, insofar as it is efficient, in substance and completion, for the action of the efficient is completed only by the end. So these two causes, namely, matter and the efficient, are prior in generation; but the form and the end are prior in perfection.

And we should note that there are two kinds of necessity: absolute necessity and conditional necessity. Absolute necessity proceeds from those causes that are prior in generation, which are matter and the efficient: for example, the necessity of death derives from matter and the disposition of the contrary components of the body; and this is called absolute, because it cannot be impeded. And this type of necessity is also called the necessity of matter. Conditional necessity, on the other hand, proceeds from those causes that are posterior in generation, namely, form and the end. For example, we say that conception is necessary, if a man is to be generated; and this is conditional, for it is not absolutely necessary for this woman to conceive, but under this condition, namely, that if a man is to be generated. And this is called the necessity of the end.

We should also know that three causes can coincide, namely the form, the end, and the efficient, as is clear in the generation of fire. For fire generates fire, so fire is the efficient, insofar as it generates; again, fire is form, insofar as it makes actual that was previously potential, and again, it is the end, insofar as it is intended by the agent, and insofar as the operation of the agent is terminated in it. But there are two kinds of ends, namely the end of generation and the end of the thing generated, as is clear in the generation of a knife. For the form of the knife is the end of its generation; but cutting, which is the operation of the knife, is the end of the thing generated, namely of the knife. Now the end of generation sometimes coincides with two of the above-mentioned causes, namely, when something is generated by something of the same species, as when man generates man, and an olive tree generates an olive tree. But this may not be thought to apply to the end of the thing generated.

We should know, however, that the end coincides with the form numerically, for it is numerically the same item that is the form of the generated thing and that is the end of the generation. But with the efficient it does not coincide numerically, but can coincide specifically. For it is impossible for the maker and the thing made to be numerically the same, but they can be the same specifically. For example, when a man generates a man, then the man generating and the man generated are numerically different, but are specifically the same. However, matter does not coincide with the others, because matter, since it is a being in potentiality, is by its very nature imperfect, while the other causes, since they are actual, are by their nature perfect; but what is perfect and what is imperfect never coincide.

Chapter 5

Having seen that there are four kinds of causes, namely, efficient, material, formal, and final, we have to know that each of these kinds is divided in various ways. For some causes are called prior and some are called posterior, as when we say that the art of medicine and the doctor are both causes of health, but the art is the prior, while the doctor is the posterior cause; and similar distinctions apply in the case of the formal cause and the other kinds of causes.

Note here that in our inquiry we always have to go back to the first cause, as when we ask: Why is he healthy? The answer is: because the doctor cured him. And then, further: How did he cure him? The answer is: by his knowledge of medicine. And we should know that it is the same thing to say that a cause is posterior and that it is proximate, or that a cause is prior and that it is remote. So these two divisions of causes, namely, into prior vs. posterior and into proximate vs. remote, signify the same. But we should know that the more universal cause is always called the remote cause and the more specific cause is called the proximate cause. For example, we say that the proximate form of man is what his definition signifies, namely rational, mortal animal, but his more remote form is animal and the even more remote one is substance. For all superiors are forms of the inferiors. Similarly, the proximate matter of the statue is bronze, while the more remote is metal and the even more remote one is body.¹⁰

Again, some causes are *per se*, others are *per accidens*. A *per se* cause of a thing is its cause insofar as it is such, as the builder [insofar as he is a builder] is the cause of the house, or the wood [insofar as it is wood] is the matter of the bench. A cause *per accidens* is one that coincides with the cause *per se*, as when we say that the doctor is building. For the doctor is a cause *per accidens* of the building, because he is building not insofar as he is a doctor, but insofar as he coincides with the builder. And the situation is similar in all other cases.

Again, some causes are simple, some are composite. Something is called a simple cause, when it is named only by the name of the *per se* cause, or only by the name of the *per accidens* cause, as when we say that the builder is the cause of the building, and similarly when we say that the doctor is the cause of the building. But a cause is called composite,

¹⁰ Although Aquinas exemplifies his claim in the case of formal and material causes, the same type of correlation between priority and universality can be observed in the case of efficient causes as well: the more remote, that is, prior cause is always more universal (i.e., acting in virtue of a more universal form, and so affecting a more extensive class of particulars). Therefore, if there is an absolutely first efficient cause, then it has to be the most universal cause, i.e., the absolutely universal cause of all beings (other than itself) as such.

when we name it by the name of both, as when we say that the builder-doctor is the cause of the building.

But, according to Avicenna's exposition, something can also be called a simple cause, if it is a cause without the addition of anything else, as bronze is the cause of the statue, for the statue is made of bronze without the addition of any other matter, or when we say that the doctor causes health, or the fire causes heat. We have a composite cause, however, when several things need to come together to constitute the cause; for example, one man cannot be the cause of the movement of a ship [by towing it], but many can, or one stone cannot be the matter of a house, but many stones can.

Again, some causes are actual causes, others are potential. An actual cause is one that is actually causing the thing, as the builder when he is actually building, or the bronze, as the statue is actually being made of it. A potential cause, on the other hand, is what is not actually causing the thing, but can cause it, as the builder, when he is actually not building. And we should know that the actual cause and its effect should exist at the same time, so that if one of them exists, then the other has to exist too.¹¹ For if the builder is actually working, then he has to be building, and if the act of building actually takes place, then the builder actually has to be working. But this is not necessary in the case of merely potential causes.

We should know, further, that a universal cause is compared to a universal effect and a singular cause is compared to a singular effect. For example, we say that a builder is the cause of a building in general, but also that this builder is the cause of this building in particular.

Chapter 6

We should also know that we can speak about the agreements and differences of the principles in terms of the agreements and differences of what they are the principles of. For some things are numerically identical, as Socrates and this man, pointing to Socrates; some things are numerically different, and specifically the same, as Socrates and Plato, who are both human, but are numerically distinct. Again, some things differ specifically, but are generically the same, as a man and a donkey, which both belong to the genus of animals; still others are the same only analogically, as substance and quantity, which do not agree in some genus, but agree only analogically: for they agree only in that they are beings. But being is not a genus, because it is not predicated univocally, but analogically.

To understand this better, we have to know that it is in three different ways that something can be predicated of several things: univocally, equivocally, and analogically. Something is predicated univocally if it is predicated by the same name and according to the same concept or definition, as "animal" is predicated of a man and a donkey, because both [man and donkey] are said to be animals and both are animated sensible substances, which is the definition of animal. Something is predicated equivocally if it is predicated of several

¹¹ An efficient cause of a thing is its actual cause only as long as it actually generates the thing, if it is a generative cause, or as long as it actually sustains the actual being of the thing, if it is a preservative cause. According to the medieval conception, it is in this latter sense that God, the Creator, is the actual efficient cause of his creatures continuously sustaining their existence in the ongoing act of continuous creation (*creatio continua*), without which creatures would simply fall into nothing, just as the lights go out if the power is turned off. It is this conception that allows the inference from the actual existence of creatures to the actual existence of the Creator, i.e., God.

things by the same name, but according to different concepts, as “dog” is predicated both of the barking animal and of the constellation, which agree only in this name but not in the definition or signification of this name: for what is signified by a name is its definition, as is stated in the fourth book of the *Metaphysics*. Finally, something is predicated analogically if it is predicated of several things, the concepts of which are different, but are related to the same thing. For example, “healthy” is said of the body of animals and of urine and of food, but it does not signify the same in all these cases. For it is said of urine, insofar as it is a sign of health, of the body, insofar as it is the subject of health, and of food, insofar as it is the cause of health; but all of these concepts are related to one and the same end, namely, health. For sometimes those that agree analogically, i.e., proportionally, or in some comparison or similitude, are related to the same end, as is clear in the previous example, but sometimes they are related to the same agent; for example, when “medical” is predicated of someone who operates by the knowledge of medicine, as a doctor, or without it, as a nurse, or when it is said of some medical instrument, always in relation to the same agent, namely the art of medicine. Again, sometimes they are related to the same subject, as when “being” is predicated of substance, of quality, of quantity, and of the other categories. For it is not entirely the same concept according to which a substance is said to be a being, and a quantity, and the rest, but all these are said to be beings only in relation to substance, which is the subject of all of them. So “being” is said primarily of substance, and only secondarily of the rest. Whence “being” is not a genus, for no genus is predicated primarily and secondarily of its species, but “being” is predicated analogically. And this is what we said, namely, that substance and quantity differ generically, but they are the same analogically.

Therefore, of those things that are numerically the same, also the form and matter are numerically the same, as Tully’s and Cicero’s. Of those things, however, that are specifically the same, but numerically distinct, also the matter and form are numerically distinct, but specifically the same, as Socrates’ and Plato’s. Likewise, of those things that are generically the same, also the principles are generically the same: as the soul and the body of a donkey and of a horse differ specifically, but are the same generically. Again, in a similar manner, of those that agree only analogically, also the principles agree only analogically. For matter and form or potentiality and actuality are the principles both of substance and of the other categories. But the matter of substance and that of quantity, and similarly their forms, differ generically, and agree only analogically or proportionally in that the matter of substance is to substance as the matter of quantity is to quantity. But just as substance is the cause of other categories, so the principles of substance are the principles of the rest.