CHAPTER 4
THE PRINCIPLES OF BEING IN GENERAL

1. BOOK V: DEFINITIONS

Lesson 1

Principle

751. Now it should be noted that, although a principle and a cause are the same in subject, they nevertheless differ in meaning; for the term principle implies an order or sequence, whereas the term cause implies some influence on the being of the thing caused. Now an order of priority and posteriority is found in different things; but according to what is first known by us order is found in local motion, because that kind of motion is more evident to the senses. Further, order is found in three classes of things, one of which is naturally associated with the other, i.e., continuous quantity, motion and time. For insofar as there is priority and posteriority in continuous quantity, there is priority and posteriority in motion; and insofar as there is priority and posteriority in motion, there is priority and posteriority in time, as is stated in Book IV of the *Physics*. Therefore, because a principle is said to be what is **first in any order**, and the order which is considered according to priority and posteriority in continuous quantity is first known by us (and things are named by us insofar as they are known to us), for this reason the term principle, properly considered, designates what is first in a continuous quantity over which motion passes. Hence he says that a principle is said to be "that from which someone first moves something," i.e., any part of a continuous quantity **from which local motion begins**. Or, according to another reading, "Some part of a thing from which motion will first begin"; i.e., some part of a thing from which it first begins to be moved; for example in the case of a line and in that of any kind of journey the principle is the point from which motion begins. But the opposite or contrary point is "something different or other," i.e., the end or terminus. It should also be noted that a principle of motion and a principle of time belong to this class for the reason just given.

752. But because motion does not always begin from the starting point of a continuous quantity but from that part from which the motion of each thing begins most readily, he therefore gives a second meaning of principle, saying that we speak of a principle of motion in another way "as that from which a thing best comes into being," i.e., the point from which each thing begins to be moved most easily. He makes this clear by an example; for in the disciplines one does not always begin to learn from something that is a beginning in an absolute sense and by nature, but from that from which one "is able to learn" most readily, i.e., from those things which are **better known to us**, even though they are sometimes more remote by their nature.

753. Now this sense of principle differs from the first. For in the first sense a principle of motion gets its name from the starting point of a continuous quantity, whereas here the principle of continuous quantity gets its name from the starting point of motion. Hence in the case of those motions which are over circular continuous quantities and have no starting point, the principle is also considered to be the point from which the movable body is best or most fittingly moved according to its nature. For example, in the case of the first thing moved [the first sphere] the starting point is in the east. The same thing is true in the case of our own movements; for a man does not always start to move from the beginning of a road but sometimes from the middle or from any terminus at all from which it is convenient for him to start moving.

754. Now from the order considered in local motion we come to know the order in other motions. And for this reason we have the senses of principle based upon the principle of generation or coming to be of things. But this is taken in two ways; for it is either "inherent," i.e., **intrinsic**, or "non-inherent," i.e., **extrinsic**.

755. In the first way, then, a principle means that part of a thing which is first generated and from which the generation of the thing begins; for example, in the case of a ship the first thing to come into being is the base or keel, which is in a certain sense the foundation on which the whole superstructure of the ship is raised. And, similarly, in the case of a house the first thing that comes into being is the foundation. And in the case of an animal the first thing that comes into being, according to some, is the heart, and according to others, the brain or some such member of the body. For an animal is distinguished from a non-animal by reason of sensation and motion. Now the principle of motion appears to be in the heart, and sensory operations are most evident in the brain. Hence those who considered an animal from the viewpoint of motion held that the heart is the principle in the generation of an animal. But those who considered an animal only from the viewpoint of the senses held that the brain is this principle; yet the first principle of sensation is also in the heart even though the operations of the senses are completed in the brain. And those who considered an animal from the viewpoint of operation, or according to some of its activities, held that the organ which is naturally disposed for that operation, as the liver or some other such part is the first part which is generated in an animal. But according to the view of the Philosopher the first part is the heart because all of the soul's powers are diffused throughout the body by means of the heart.

756. In the second way, a principle means that from which a thing's process of generation begins but which is **outside** the thing. This is made clear in the case of three classes of things. The first is that of natural beings, in which the principle of generation is said to be the first thing from which motion naturally begins in those things which come about through motion (as those which come about through alteration or through some similar kind of motion; for example, a man is said to become large or white); or that from which a complete change begins (as in the case of those things which are not a

result of motion but come into being through mutation alone). This is evident in the case of substantial generation; for example, a child comes from its father and mother, who are its principles, and a fight from abusive language, which stirs the souls of men to quarrel.

757. The second class in which this is made clear is that of **human acts**, whether ethical or political, in which that by whose will or intention others are moved or changed is called a principle. Thus those who hold civil, imperial, or even tyrannical power in states are said to have the principal places; for it is by their will that all things come to pass or are put into motion in states. Those men are said to have civil power who are put in command of particular offices in states, as judges and persons of this kind. Those are said to have imperial power who govern everyone without exception, as kings. And those hold tyrannical power who through violence and disregard for law keep royal power within their grip for their own benefit.

758. He gives as the third class things made by **art**; for the arts too in a similar way are called principles of artificial things, because the motion necessary for producing an artifact begins from an art. And of these arts the architectonic, which "derive their name" from the word principle, i.e., those called principal arts, are said to be principles in the highest degree. For by architectonic arts we mean those which govern subordinate arts, as the art of the navigator governs the art of ship-building, and the military art governs the art of horsemanship.

759. Again, in likeness to the order considered in external motions a certain order may also be observed in our **apprehensions** of things, and especially insofar as our act of understanding, by proceeding from principles to conclusions, bears a certain resemblance to motion. Therefore in another way that is said to be a principle from which a thing first becomes known; for example, we say that "postulates," i.e., axioms and assumptions, are principles of demonstrations.

760. Causes are also said to be principles in these ways, "for all causes are principles." For the motion that terminates in a thing's being begins from some cause, although it is not designated a cause and a principle from the same point of view, as was pointed out above (750).

761. Then he reduces all of the abovementioned senses of principle to one that is common. He says that all of the foregoing senses have something in common inasmuch as that is said to be a principle which comes first (1) either with reference to a thing's **being** (as the first part of a thing is said to be a principle) or (2) with reference to its **coming to be** (as the first mover is said to be a principle) or with reference to the knowing of it.

Lesson 2

The four causes

763. Here the Philosopher distinguishes the various senses in which the term cause is used; and in regard to this he does two things. First, he enumerates the classes of causes. Second (783), he gives the modes of causes ("Now the modes").

In regard to the first part he does two things. First, he enumerates the various classes of causes. Second (777), he reduces them to four ("All the causes").

In regard to the first part he does two things. First, he enumerates the different classes of causes. Second (773), he clarifies certain things about the classes of causes ("And since").

He accordingly says, first, that in one sense the term cause means that from which a thing comes to be and is "something intrinsic," i.e., something which exists within the thing. This is said to distinguish it from a **privation** and also from a **contrary**; for a thing is said to come from a privation or from a contrary as from something which is not intrinsic; for example, white is said to come from black or from not-white. But a statue comes from bronze and a goblet from silver as from something which is intrinsic; for the nature bronze is not destroyed when a statue comes into being, nor is the nature silver destroyed when a goblet comes into being. Therefore the bronze of a statue and the silver of a goblet are causes in the sense of matter. He adds "and the genera of these," because if matter is the species of anything it is also its genus. For example, if the matter of a statue is bronze, its matter will also be metal, compound and body. The same holds true of other things.

764. In another sense cause means the **form and pattern** of a thing, i.e., its exemplar. This is the formal cause, which is related to a thing in two ways. (1) In one way it stands as the intrinsic form of a thing, and in this respect it is called the formal principle of a thing. (2) In another way it stands as something which is extrinsic to a thing but is that in likeness to which it is made, and in this respect an **exemplar** is also called a thing's form. It is in this sense that Plato held the Ideas to be forms. Moreover, because it is from its form that each thing derives its nature, whether of its genus or of its species, and the nature of its genus or of its species is what is signified by the definition, which expresses its quiddity, the form of a thing is therefore the intelligible expression of its quiddity, i.e., the formula by which its quiddity is known. For even though certain material parts are given in the definition, still it is from a thing's **form** that the **principal part of the definition** comes. The reason why the form is a cause, then, is that it completes the intelligible expression of a thing's quiddity. And just as the genus of a particular matter is also matter, in a similar way the genera of forms are the forms of things; for example, the form of the octave chord is the ratio of 2:1. For when two notes stand to each other in the ratio of 2:1, the interval between them is one octave. Hence twoness is its form; for the ratio of 2:1 derives its meaning from twoness. And because number is the genus of twoness, we may therefore say in a general way that number is also the form of the octave, inasmuch as we may say that the octave chord involves the ratio of one number to another. And not only is the whole definition related to the thing defined as its form, but so also are the parts of the definition, i.e., those which are given directly in the definition. For just as two-footed animal capable of walking is the form of man, so also are animal, capable of walking and two-footed. But sometimes **matter** is given **indirectly** in the definition, as

when the soul is said to be the actuality of a physical organic body having life potentially.

765. In a third sense cause means that from which the first beginning of change or of rest comes, i.e., a moving or **efficient** cause. He says "of change or of rest," because motion and rest which are natural are traced back to the same cause, and the same is true of motion and of rest which are a result of force. For that cause by which something is moved to a place is the same as that by which it is made to rest there. "An adviser" is an example of this kind of cause, for it is as a result of an adviser that motion begins in the one who acts upon his advice for the sake of safeguarding something. And in a similar way "a father is the cause of a child." In these two examples Aristotle touches upon the, two principles of motion from which all things come to be, namely, purpose in the case of an adviser, and nature in the case of a father. And in general every maker is a cause of the thing made and every changer a cause of the thing changed.

766. Moreover, it should be noted that according to Avicenna, there are four modes of efficient cause, namely, perfective, dispositive, auxiliary and advisory.

An efficient cause is said to be **perfective** inasmuch as it causes the final perfection of a thing, as the one who induces a substantial form in natural things or artificial forms in things made by art, as a builder induces the form of a house.

767. An efficient cause is said to be **dispositive** if it does not induce the final form that perfects a thing but only prepares the matter for that form, as one who hews timbers and stones is said to build a house. This cause is not properly said to be the efficient cause of a house, because what he produces is only potentially a house. But he will be more properly an efficient cause if he induces the ultimate disposition on which the form necessarily follows; for example, man generates man without causing his intellect, which comes from an extrinsic cause.

768. And an efficient cause is said to be **auxiliary** insofar as it contributes to the principal effect. Yet it differs from the principal efficient cause in that the principal efficient cause acts for its own end, whereas an auxiliary cause acts for an end which is not its own. For example, one who assists a king in war acts for the king's end. And this is the way in which a **secondary** cause is disposed for a primary cause. For in the case of all efficient causes which are directly **subordinated** to each other, a secondary cause acts because of the end of a primary cause; for example, the military art acts because of the end of the political art.

769. And an **advisory** cause differs from a principal efficient cause inasmuch as it specifies the end and form of the activity. This is the way in which the first agent acting by intellect is related to every secondary agent, whether it be natural or intellectual. For in every case a first intellectual agent gives to a secondary agent its end and its form of activity; for example, the naval architect gives these to the shipwright, and the first intelligence does the same thing for everything in the natural world.

770. Further, to this genus of cause is reduced everything that makes anything to be in any manner whatsoever, not only as regards **substantial** being, but also as regards **accidental** being, which occurs in every kind of motion. Hence he says not only that the **maker** is the cause of the thing made, but also that the **changer** is the cause of the thing changed.

771. In a fourth sense cause means a thing's **end**, i.e., that for the sake of which something is done, as health is the cause of walking. And since it is less evident that the end is a cause in view of the fact that it comes into being last of all (which is also the reason why this cause was overlooked by the earlier philosophers, as was pointed out in Book I (1771), he therefore gives a special proof that an end is a cause. For to ask **why** or for what reason is to ask about a cause, because when we are asked why or for what reason someone walks, we reply properly by answering that he does so in order to be healthy. And when we answer in this way we think that we are stating the cause. Hence it is evident that the end is a cause. Moreover, not only the **ultimate** reason for which an agent acts is said to be an end with respect to those things which precede it, but everything that is **intermediate** between the first agent and the ultimate end is also said to be an end with respect to the preceding agents. And similarly those things are said to be causes from which motion arises in subsequent things. For example, between the art of medicine, which is the first efficient cause in this order, and health, which is the ultimate end, there are these **intermediates**: reducing, which is the most proximate cause of health in those who have a superfluity of humors; purging, by means of which reducing is brought about; "drugs," i.e., laxative medicine, by means of which purging is accomplished; and "instruments," i.e., the instruments by which medicine or drugs are prepared and administered. And all such things exist for the sake of the end, although one of them is the end of another. For reducing is the end of purging, and purging is the end of purgatives. However, these intermediates differ from each other in that (1) some are instruments, i.e., the instruments by means of which medicine is prepared and administered (and the administered medicine itself is something which nature employs as an instrument); and (2) some—purging and reducing—are processes, i.e., operations or activities.

772. He concludes, then, that "these are the ways in which causes are spoken of (405)," i.e., the four ways; and he adds "nearly all" because of the modes of causes which he gives below. Or he also adds this because the same classes of causes are not found for the same reason in all things.

773. Then he indicates certain points which follow from the things said above about the causes, and there are four of these. The first is that, since the term cause is used in many senses, there may be **several causes** of one thing not accidentally but properly. For the fact that there are many causes of one thing accidentally presents no difficulty, because many things may be accidents of something that is the proper cause of some effect, and all of these can be said to be accidental causes of that effect. But that there are **several proper causes** of one thing becomes evident from the fact that causes are spoken of in various ways. For the

maker of a statue is a proper cause and not an accidental cause of a statue, and so also is the bronze, but not in the same way. For it is impossible that there should be many proper causes of the same thing within the same genus and in the same order, although there can be many causes providing that (1) one is proximate and another remote; or (2) that neither of them is of itself a sufficient cause, but both together. An example would be many men rowing a boat. Now in the case in point these two things are causes of a statue in different ways: the bronze as matter, and the artist as efficient cause.

774. Then he sets down the second fact that may be drawn from the foregoing discussion. He says that it may also happen that any two things may be the cause of each other, although this is impossible in the same class of cause. But it is evident that this may happen when causes are spoken of in different senses. For example, the pain resulting from a wound is a cause of health as an efficient cause or source of motion, whereas health is the cause of pain as an end. For it is impossible, that a thing should be both a cause and something caused. Another text states this better, saying that "exercise is the cause of physical fitness," i.e., of the good disposition caused by moderate exercise, which promotes digestion and uses up superfluous humors.

775. Now it must be borne in mind that, although four causes are given above, two of these are related to one another, and so also are the other two. (1) The efficient cause is related to the final cause, and (2) the material cause is related to the formal cause. The efficient cause is related to the final cause because the efficient cause is the starting point of motion and the final cause is its terminus. There is a similar relationship between matter and form. For form gives being, and matter receives it. Hence the efficient cause is the cause of the final cause, and the final cause is the cause of the efficient cause. The efficient cause is the cause of the final cause inasmuch as it makes the final cause be, because by causing motion the efficient cause brings about the final cause. But the final cause is the cause of the efficient cause, not in the sense that it makes it be, but inasmuch as it is the reason for the causality of the efficient cause. For an efficient cause is a cause inasmuch as it acts, and it acts only because of the final cause. Hence the efficient cause derives its causality from the final cause. And form and matter are mutual causes of being: form is a cause of matter inasmuch as it gives actual being to matter, and matter is a cause of form inasmuch as it supports form in being. And I say that both of these together are causes of being either in an unqualified sense or with some qualification. For substantial form gives being absolutely to matter, whereas accidental form, inasmuch as it is a form, gives being in a qualified sense. And matter sometimes does not support a form in being in an unqualified sense but according as it is the form of this particular thing and has being in this particular thing. This is what happens in the case of the human body in relation to the rational soul.

776. Then he gives the third conclusion that may be drawn from the foregoing discussion. He says that the same thing can be the cause of **contraries**. This would also seem to be difficult or impossible if it were related to both in the same way. But it is the cause of each in a different way. For that which when present is the cause of some particular thing, this when absent "we blame," i.e., we hold it responsible, "for the contrary." For example, it is evident that by his presence the pilot is the cause of a ship's safety, and we say that his absence is the cause of the ship's loss. And lest someone might think that this is to be attributed to different classes of causes, just as the preceding two were, he therefore adds that both of these may be reduced to the same class of cause—the **moving** cause. For the opposite of a cause is the cause of an opposite effect in the same line of causality as that in which the original cause was the cause of its effect.

Lesson 3

Four modes of causes

783. Then he distinguishes between the modes of causes. And causes are distinguished into **classes** and into **modes**. For the division of causes into classes is based on different formal aspects of causality, and is therefore equivalently a division based on essential differences, which constitute species. But the division of causes into modes is based on the different relationships between causes and things caused, and therefore pertains to those causes which have the same formal aspect of causality. An example of this is the division of causes into proper and accidental causes, and into remote and proximate causes. Therefore this division is equivalently a division based on accidental differences, which do not constitute different species.

784. He accordingly says that there are many modes of causes, but that these are found to be fewer in number when "summarized," i.e., when brought together under one head. For even though proper causes and accidental causes are two modes, they are still reduced to one head insofar as both may be considered from the same point of view. The same thing is true of the other different modes. For many different modes of causes are spoken of, not only with reference to the different species of causes, but also with reference to causes of the same species, namely, those which are reduced to one class of cause.

785. (1) For one cause is said to be **prior** and another **subsequent**; and causes are prior or subsequent in two ways: (a) In one way, when there are many distinct causes which are related to each other, one of which is **primary** and remote, and another **secondary** and proximate (as in the case of efficient causes man generates man as a proximate and subsequent cause, but the sun as a prior and remote cause); and the same thing can be considered in the case of the other classes of causes. (b) In another way, when the cause is numerically one and the same, but is considered according to the sequence which reason sets up between the **universal** and the **particular**; for the universal is naturally prior and the particular subsequent.

786. But he omits the first way and considers the second. For in the second way the effect is the immediate result of both causes, i.e., of both the prior and subsequent cause; but this cannot happen in the first way. Hence he says that the cause of health is both the physician and one possessing an art, who

belong to the class of efficient cause: one possessing an art as a universal and prior cause, and the physician as a particular, or special, and subsequent cause. The same thing is true of the formal cause, since this cause may also be considered in two ways; for example, for an octave chord "double," or the ratio of 2:1, or the number two, is a formal cause as one that is special and subsequent, whereas number, or the ratio of one number to another or to the unit, is like a universal and prior cause. And in this way too "always those classes which contain singulars," i.e., universals, are said to be prior causes.

787. (2) Causes are distinguished in another way inasmuch as one thing is said to be a **proper** cause and another an **accidental** cause. For just as proper causes are divided into universal and particular, or into prior and subsequent, so also are accidental causes. Therefore, not only accidental causes themselves are called such, but so also are the classes which contain these. For example, a sculptor is the proper cause of a statue, and Polyclitus is an accidental cause inasmuch as he happens to be a sculptor. And just as Polyclitus is an accidental cause of a statue, in a similar way all universals "which contain accidents," i.e., accidental causes, are said to be accidental causes, for example, man and animal, which contain under themselves Polyclitus, who is a man and an animal.

788. And just as some proper causes are proximate and some remote, as was pointed out above, so also is this the case with accidental causes. For Polyclitus is a more proximate cause of a statue than what is white or what is musical. For an accidental mode of predication is more remote when an accident is predicated of an accident than when an accident is predicated of a subject. For one accident is predicated of another only because both are predicated of a subject. Hence when something pertaining to one accident is predicated of another, as when something pertaining to a builder is predicated of a musician, this mode of predication is more remote than one in which something is predicated of the subject of an accident, as when something pertaining to a builder is predicated of Polyclitus.

789. Now it must be borne in mind that one thing can be said to be the **accidental** cause of something else in two ways: (a) in one way, from the viewpoint of the **cause**; because whatever is accidental to a cause is itself called an accidental cause, for example, when we say that something white is the cause of a house. (b) In another way, from the viewpoint of the **effect**, i.e., inasmuch as one thing is said to be an accidental cause of something else because it is accidental to the proper effect. This can happen in three ways:

The first is that the thing has a **necessary** connection with the effect. Thus that which removes an obstacle is said to be a mover accidentally. This is the case whether that accident is a contrary, as when bile prevents coolness (and thus scammony is said to produce coolness accidentally, not because it causes coolness, but because it removes the obstacle preventing coolness, i.e., bile, which is its contrary); or even if it is not a contrary, as when a pillar hinders the movement of a stone which rests upon it, so that one who removes the pillar is said to move the stone accidentally.

In a second way, something is accidental to the proper effect when the accident is connected with the effect neither necessarily nor in the majority of cases but **seldom**, as the discovery of a treasure is connected with digging in the soil. It is in this way that fortune and chance are said to be accidental causes.

In a third way things are accidental to the effect when they have no connection except perhaps **in the mind**, as when someone says that he is the cause of an earthquake because an earthquake took place when he entered the house.

790. (3) [Cross-division of all] And besides the distinction of all things into causes in themselves or proper causes and accidental causes, there is a third division of causes inasmuch as some things are causes **potentially** and some **actually**, i.e., actively. For example, the cause of building is a builder in a state of potency (for this designates his habit or office), or one who is actually building.

791. And the same distinctions which apply to causes can apply to the effects of which these causes are the causes. For effects, whether particular or universal, can be divided into prior and subsequent, as a sculptor may be called the cause of this statue, which is subsequent; or of a statue, which is more universal and prior; or of an image, which is still more universal. And similarly something is the formal cause of this particular bronze; or of bronze, which is more universal; or of matter, which is still more universal. The same things can be said of accidental effects, i.e., of things produced by accident. For a sculptor who is the cause of a statue is also the cause of the heaviness, whiteness or redness which are in it as accidents from the matter and are not caused by this agent.

792. (4) Again, he gives a fourth division of causes, namely, the division into **simple** causes and **composite** causes. A cause is said to be simple (a) when, for example, in the case of a statue, the **proper cause alone** is considered, as a sculptor, or when an **accidental cause alone** is considered, as Polyclitus. But a cause is said to be composite when both are taken together, for example, when we say that the cause of a statue is the sculptor Polyclitus.

793. (b) There is moreover another way in which causes are said to be composite, i.e., when **several causes act together** to produce one effect, for example, when many men act together in order to row a boat, or when many stones combine in order to constitute the matter of a house. But he omits the latter way because no one of these things taken in itself is the cause, but a part of the cause.

794. And having given these different modes of causes, he brings out their number, saying that these modes of causes are six in number, and that each of these have two alternatives so that twelve result. For these six modes are (1-2) either singular or generic (or, as he called them above, prior and subsequent); (3-4) either proper or accidental (to which the genus of the accident is also reduced, for the genus to which an accident belongs is an accidental cause); and again, (5-6) either composite or simple. Now these six modes are further divided by **potency** and **actuality** and thus are twelve in number. Now the reason why all these modes must be divided

by potency and actuality is that potency and actuality distinguish the connection between cause and effect. For active causes are at one and the same time particulars and cease to exist along with their effects; for example, this act of healing ceases with this act of recovering health, and this act of building with this thing being built; for a thing cannot be actually being built unless something is actually building. But potential causes do not always cease to exist when their effects cease; for example, a house and a builder do not cease to exist at one and the same time. In some cases, however, it does happen that when the activity of the efficient cause ceases the substance of the effect ceases. This occurs in the case of those things whose being consists in coming to be, or whose cause is not only the cause of their coming to be but also of their being. For example, when the sun's illumination is removed from the atmosphere, light ceases to be. He says "singular causes" because acts belong to singular things, as was stated in Book I of this work (21).

2. BOOK I: SURVEY OF CAUSES

Lesson 4 *The four causes; 3 characteristics of final cause*

70. Accordingly, he says, first, that since it is evident that wisdom speculates about causes, we ought to begin by acquiring knowledge from the causes of things. This also seems to be in keeping with the intelligible structure of science, because we say that we know each thing scientifically when we think we are not ignorant of its cause. Now causes are spoken of in four ways. (1) One of these is the **formal** cause, which is the very substance of a thing by which we know what each thing is. For it is well known, as is stated in Book II of the *Physics*, that we do not say that anything has a nature before it has received a form. Now it is clear that a form is a cause, because the question "Why is something so?" we reduce to its formal cause as its ultimate explanation, beginning with proximate forms and proceeding to the ultimate form. But evidently the "why?" asks about a cause and principle. Hence it is evident that a form is a cause. (2) A second cause is the **material** cause. (3) A third is the **efficient** cause, which is the source of motion. (4) A fourth is the **final** cause, which is opposite to the efficient cause as a goal is to a starting-point; for motion begins with the efficient cause and terminates with the final cause. This [latter] cause is also that for the sake of which a thing comes to be, and the good of each nature.

71. He makes the **final** cause known by three considerations: (1) It is the goal of motion, and thus is opposite to the source of motion, which is the efficient cause. (2) It is first in intention, and for this reason is said to be that for the sake of which [something is done]. (3) It is desirable of itself, and for this reason is called a good; for the good is what all desire.

Hence, in explaining how the final cause is opposite to the efficient cause, he says that it is the goal [or end] of every process of generation and motion, whose starting-point is the efficient cause. By these two types of change he seems to imply that there is a twofold goal: (1) For the goal of a process of **generation** is the form itself, which is a part of a thing. (2) But the goal of **motion** is something sought for outside the thing moved. He says that he has treated these causes at sufficient length in the *Physics*, lest he should be asked to make a more extensive treatment of them.

OPINIONS OF THOSE WHO GAVE ONLY MATERIAL CAUSE

Four characteristics of matter

74. Accordingly he says, first (36), that most of those who first philosophized about the natural world held that the principles of all things are merely those which are referred to the class of **material cause**. In regard to this it must be said that they took the four conditions of matter which seem to belong to the notion of a principle. For, (1) that of which a thing is **composed** seems to be a principle of that thing. But matter is such a thing; for we say that a thing that has matter is of its matter, as a knife is of iron. (2) That **from which** a thing comes to be, being also a principle of the process of generation of that thing, seems to be one of its causes, because a thing comes into being by way of generation. But a thing first comes to be from matter, because the matter of things precedes their production. And a thing does not come from matter in an accidental way; for a thing is generated in an accidental way from its contrary or privation, as when we say that white comes from black. (3) Third, that **into which** all things are ultimately dissolved by corruption seems to be a principle of things. For just as principles are first in the process of generation, in a similar way they are last in the process of dissolution; and obviously this too pertains to matter. (4) Fourth, since a principle must remain in existence, then that which **remains throughout** the process of generation and corruption seems to be a principle. Now the matter which they said is the substance of a thing remains throughout every transmutation, although its attributes, such as its form and everything that accrues to it over and above its material substance, are changed. From all these considerations they concluded that matter is the element and principle of all beings.

Without material cause, no generation or corruption

75. Then he gives, as a secondary point, what they held as following from the above, namely, that in the world nothing is generated or corrupted in an absolute sense. For when some change occurs with regard to a thing's attributes, and its substance remains unchanged, we do not say that it is generated or corrupted in an absolute sense, but only in a qualified one; for example, when Socrates becomes good or musical, we do not say that he simply comes to be, but comes to be this. And similarly when he loses a state of this kind, we do not say that he is corrupted in an absolute sense, but only in a qualified one. But matter, which is the substance of things according to them, always remains; and every change affects some of a thing's accidents, such as its attributes. From this they concluded that nothing is generated or corrupted in an absolute sense, but only in a qualified one.

Opinions of pre-Socratics on material cause (76-92): Give modern equivalents.

Lesson 5

OPINIONS ON EFFICIENT CAUSE: intellect or love

100. Here he gives in detail the opinions about the aforesaid principle. First, he gives the opinions of those who held that there is one [efficient] cause; and second (104), the opinions of those who held that there are two such causes ("But since there would seem").

In regard to the first he does two things. First, he gives the views of those who held that the **first efficient cause is an intellect**; and second (101), the opinions of those who held that it is love ("Now someone might").

He says, then, that after the foregoing doctrine someone appeared who said that there is an intellect present in nature at large, just as there is in animals, and that this is the cause of the world and the order of the whole, i.e., of the universe, in which order the good of the entire universe and that of every single part consists. And this man atoned for the first philosophers by reducing to pure truth those who said unreasonable things and did not mention this kind of cause. Now Anaxagoras clearly stated this doctrine, although another philosopher —Hermotimus of Clazomenae—first gave him the idea of proposing this opinion. Hence it is evident that those who held this opinion claimed at the same time that the principle by which things are well disposed and the one which is the source of motion in things, are one and the same.

101. Here he gives the opinion of those who claimed that **love** is the first principle, although they did not hold this very explicitly or clearly. Accordingly, he says that some suspected that Hesiod had sought for such a principle to account for the good disposition of things, or anyone else who posited love or desire in nature. For when Parmenides attempted to explain the generation of the universe, he said that in the establishing of the universe "Love, the first of all the gods, was made." Nor is this opposed to his doctrine that there is one immobile being, of which Aristotle speaks here; because this man held that there are many things according to the senses, although there is only one thing according to reason, as was stated above and will be stated below. Moreover, he called the celestial bodies, or perhaps certain separate substances, gods.

102. But Hesiod said that first of all there was chaos, and then broad earth was made, to be the receptacle of everything else; for it is evident that the receptacle [or void] and place are principles, as is stated in Book IV of the *Physics*. And he also held that love, which instructs all the immortals, is a principle of things. He did this because the communication of goodness seems to spring from love, for a good deed is a sign and effect of love. Hence, since corruptible things derive their being and every good disposition from immortal beings of this kind, this must be attributed to the love of the immortals. Furthermore, he held that the immortals are either the celestial bodies themselves, or material principles themselves. Thus he posited chaos and love as though there had to be in existing things not only a material cause of their motions, but also an efficient cause which moves and unites them, which seems to be the office of love. For love moves us to act, because it is the source of all the emotions, since fear, sadness and hope proceed only from love. That love unites things is clear from this, that love itself is a certain union between the lover and the thing loved, seeing that the lover regards the beloved as himself. This man Hesiod is to be numbered among the poets who lived before the time of the philosophers.

Lesson 7

STRANGE AND OBSCURE VIEWS ABOUT THE PRINCIPLES OF THINGS

Hidden principles: numbers

121. Here he gives the second reason which motivated them. For they thought of the attributes of harmonies, musical consonants and their ratios, i.e., proportions, in terms of the nature of numbers. Hence, since harmonious sounds are certain sensible things, they attempted by the same reasoning to liken all other sensible things, both in their intelligible structure and in their whole nature, to numbers, so that numbers are the first things in the whole of nature.

122. For this reason too they thought that the principles of numbers are the principles of all existing things, and they said that the whole heaven is merely a kind of nature and harmony of numbers, i.e., a kind of numerical proportion similar to the proportion found in harmonies. Hence, whatever they had "revealed," i.e., had shown, which they could adapt to numbers and harmonies, they also adapted both to the changes undergone by the heavens, as its motion, eclipses and the like; and to its parts, as the different orbs; and to the whole arrangement of the heavens, as the different stars and different figures in the constellations.

Lesson 9

Unitarians

134. ...He says, then, that there were certain philosophers, other than those just mentioned, who spoke "of the whole," i.e,, of the universe, as if it were of one nature, i.e., as if the whole universe were a single being or a single nature. However, not all maintained this position in the same way, as he will make clear below (138-49). Yet in the way in which they differ their statements are neither acceptable nor in conformity with nature. None of their statements are in conformity with nature, because they did away with motion in things. And none of them are acceptable, because they held an impossible position and used sophistical arguments, as is clear in Book I of the *Physics*.

135. Here he shows how a consideration of this position pertains to the present investigation and how it does not. He shows, first, that it has no bearing on this investigation if we consider their position itself; and, second (137), that it does have a bearing on this investigation if the reasoning or method behind their position is considered ("Yet their opinion").

He says, then, that since these philosophers held that there is

only one being, and a single thing cannot be its own cause, it is clear that they could not discover the causes. For the position that there is a plurality of things demands a diversity of causes in the world. Hence, a consideration of their statements is of no value for the purposes of the present study, which deals with causes. But the situation is different in the case of the ancient philosophers of nature, who held that there is only one being, and whose statements must be considered here. For they generated many things from that one principle as matter, and thus posited both cause and effect. But these men with whom we are now dealing speak of this in a different way. For they do not say that all things are one materially, so that all things are generated from one matter, but that all things are one in an absolute sense.

136. The reason for this difference is that the ancient philosophers of nature added motion to the view of those who posited one being and one principle, and said that this one being is mobile; and therefore different things could be generated from that one principle by a certain kind of motion, i.e., by **rarefaction** and **condensation**. And they said that the whole universe with respect to the diversity found in its parts is generated in this way. Yet since they held that the only change affecting substance is **accidental**, as was stated above (75), the conclusion then followed that the whole universe is one thing substantially but many things accidentally. But these thinkers [i.e., the Eleatics], said that the one being which they posited is immobile in an absolute sense; and therefore a diversity of things could not be produced from that one being. For since this being is immobile they could not posit any plurality in the world, either substantial or accidental.

137. Here he shows how their opinion is relevant to the present inquiry. First, he deals with all of these thinkers in general; and second (142), with Parmenides in particular.

He says, first, that although they did away with diversity in the world, and consequently with causality, nevertheless their opinion is relevant to the present study to this extent, let us say: as regards the method by which they establish their position and the reason for their position.

138. Parmenides, who was a member of this group, seems to touch on unity according to intelligible structure) i.e., according to **form**; for he argued as follows: besides being there is only non-being, and non-being is nothing. Therefore besides being there is nothing. But being is one. Therefore, besides the one there is nothing.

In this argument he clearly considered the intelligible structure itself of being, which seems to be one, because nothing can be understood to be added to the concept of being by which it might be diversified. For whatever is added to being must be other than being. But anything such as this is nothing. Hence it does not seem that this can diversify being; just as we also see that differences added to a genus diversify it, even though these differences are outside the substance of that genus. For differences do not participate in a genus, as is stated in the *Topics*, Book IV, otherwise a genus would have the substance of a difference. And definitions would be nonsense if when a genus is given the difference were added, granted that the genus were the substance of the difference, just as it would be nonsense if the species were added. Moreover a difference would not differ in any way from a species. But those things which are outside the substance of being must be non-being, and thus cannot diversify being.

139. But they were mistaken in this matter, because they used being as if it were one in intelligible structure and in nature, like the nature of any **genus**. But this is impossible. For being is not a genus but is predicated of different things in many ways. Therefore in Book I of the *Physics* it is said that the statement "Being is one" is false. For being does not have one nature like one genus or one species.

140. But Melissus considered being in terms of **matter**. For he argued that being is one by reason of the fact that being is not generated from something prior, and this characteristic pertains properly to matter, which is ungenerated. For he argued in this way: whatever is generated has a starting-point. But being is not generated and therefore does not have a starting-point. But whatever lacks a starting-point lacks an end and therefore is unlimited. And if it is unlimited, it is immobile, because what is unlimited has nothing outside itself by which it is moved.

That being is not generated he proves thus. If being were generated, it would be generated either from being or from non-being. But it is not generated from non-being, because non-being is nothing and from nothing nothing comes. Nor is it generated from being, because then a thing would be before it came to be. Therefore it is not generated in any way.

In this argument he obviously treats being as matter, because it is of the very nature of matter not to be generated from something prior. And since limitation pertains to form, and unlimitedness to matter, *Melissus*, who considered being under the aspect of **matter**, said that there is one unlimited being. But *Parmenides*, who considered being under the aspect of **form**, said that being is limited. Hence, insofar as being is considered under the aspect of form and matter, a study of these men is relevant to the present investigation; because matter and form are included among the causes.

141. But Xenophanes, who was the first of those to say that everything is one (and therefore Parmenides was his disciple), did not explain by what reasoning he maintained that all things are one, either by arguing from the viewpoint of matter, or from that of form. Hence, with respect to neither nature, i.e., neither matter nor form, does he seem "to come up to these men," that is, to reach and equal them in their irrational manner of arguing.

But concerning the whole heaven he says that the one is God. For the ancients said that the world itself is God. Hence, seeing that all parts of the universe are alike insofar as they are bodies, he came to think of them as if they were all one. And just as the foregoing philosophers held that beings are one by considering those things which pertain either to matter or to form, in a similar way these philosophers maintained this position regarding the composite itself.

142. His aim here is to explain in a special way how the opinion of Parmenides pertains to the present investigation. He concludes from the foregoing that, since these men did away with (~) **diversity** in the world and therefore with (~) **causality**, all of them must be disregarded so far as the present study is concerned. Two of them—Xenophanes and Melissus—must be disregarded altogether, because they are a little too "rustic," i.e., they proceeded with less accuracy. But Parmenides seems to have expressed his views "with more insight," i.e., with greater understanding. For he employs the following argument: besides being there is only non-being, and whatever is non-being "is thought to be nothing"; i.e., he considers it worthy to be nothing. Hence he thought that it necessarily followed that being is one, and that whatever is other than being is nothing. This argument has been treated more clearly in the *Physics*, Book I.

143. But even though Parmenides was compelled by this argument to hold that all things are one, yet, because there appeared to the senses to be many things in reality, and because he was compelled to accept what appeared to the senses, it was his aim to make his position conform to both of these, i.e., to what is apprehended both by the senses and by reason. Hence he said that all things are one according to reason but many according to the senses.

And inasmuch as he held that there is a plurality of things according to the senses, he was able to hold that there is in the world both cause and effect. Hence he posited two causes, namely, the hot and the cold, one of which he ascribed to fire, and the other to earth. And one of these—the hot or fire—seemed to pertain to the efficient cause, and the other—cold or earth—to the material cause. And lest his position should seem to contradict the conclusion of his own argument that whatever is besides being is nothing, he said that one of these causes—the hot—is being, and that the other cause—the one besides being, or the cold—is non-being, according to. both reason and the truth of the thing itself, and is a being only according to sensory perception.

144. Now in this matter he comes very close to the truth; for the **material** principle, which he held to be earth, is **not an actual being**.

And in a similar way, too, one of two contraries is a **privation**, as is said in Book I of the *Physics*. But privation does not belong to the intelligible constitution of being. Hence in a sense cold is the privation of heat, and thus is non-being.

145. Here he summarizes the remarks which have been made about the doctrines of the ancient philosophers; and in regard to this he does two things. First, he summarizes the remarks made about the doctrines of the ancient philosophers of nature; and second (147), those made about the doctrines of the Pythagoreans, who introduced mathematics.

Therefore from the above remarks he concludes, first, that from the foregoing philosophers, who adopted the same opinion, namely, that the material cause is the substance of things, and who were already beginning by the use of reason to know the causes of things by investigating them, we learn the causes which have been mentioned. For from the first philosophers it was learned that the principle of all things is corporeal. This is evident from the fact that water and the like, which are given as the principles of things, are bodies. However, they differed in this respect, that some, such as Thales, Diogenes and similar thinkers, claimed that there is only one corporeal principle, whereas others, such as Anaxagoras, Democritus and Leucippus, held that there are several corporeal principles. Yet both groups, i.e., both those who posited one principle and those who posited many, placed such corporeal principles in the class of material cause. And some of them not only posited a material cause but added to this the cause from which motion begins: some holding it to be one, as Anaxagoras did in positing intellect, and Parmenides, love, and others to be two, as Empedocles did in positing love and hate.

146. Hence, it is clear that these philosophers who lived down to the time of the Italians, or Pythagoreans, "and [were] independent of them," i.e., who had their own opinions about reality and were unaware of those of the Pythagoreans, spoke obscurely about the principles of things; for they did not designate to what class of cause such principles might be reduced. Yet they made use of two causes, i.e., the source from which motion begins and matter: some saying that the former—the source from which motion begins—is one, and others two; as has been pointed out (145).

147. Here he summarizes the opinions expressed by the Pythagoreans, both what they held in common with the foregoing philosophers, and what was peculiar to themselves. Now the opinion common to some of the foregoing philosophers and to the Pythagoreans was this that they posited, in a sense, two principles in the same way as the foregoing philosophers did. For Empedocles held that there are two contrary principles, one being the principle of good things, and the other the principle of evil things, and the Pythagoreans did the same thing, as is clear from the co-ordination of contrary principles which they posited.

148. However, they did not do this in the same way; because Empedocles placed these contrary principles in the class of material cause, as was stated above (111), whereas the Pythagoreans added their own opinion to that of the other thinkers. The first thing that they added is this: they said that what I call the *one*, the *limited* and the *unlimited* are not (~) **accidents** of any other natures, such as fire or earth or the like, but claimed that what I call the one, the limited and the unlimited constitute the (+) **substance** of the same things of which they are predicated. From this they concluded that *number*, which is constituted of units, is the substance of all things. But while the other philosophers of nature posited the one, the limited and the unlimited, they nevertheless attributed these to another nature, as accidents are attributed to a subject, for example, to fire or water or something of this kind.

149. The second addition which they made to the views of the other philosophers is this: they began to discuss and to define "the whatness itself," i.e., the **substance** and quiddity of things, although they treated this far too simply by defining things superficially. For in giving definitions they paid

attention only to one thing; because they said that, if any given definition were to apply primarily to some thing, this would be the substance of that thing; just as if one were to suppose that the ratio "double" is the substance of the number two, because such a ratio is found first in the number two. And since being was found first in the one rather than in the many (for the many is composed of ones), they therefore said that being is the substance itself of the one.

But this conclusion of theirs is not acceptable; for although the number two is double, the essence of twoness is not the same as that of the double in such a way that they are the same conceptually, as the definition and the thing defined. But even if their statements were true, it would follow that the many would be one. For some plurality can belong primarily to something one; for example, evenness and the ratio double belong first to the number two. Hence [according to them] it would follow that the even and the double are the same. And it would likewise follow that that to which the double belongs is the same as the number two, so long as the double is the substance of the number two. This, indeed, is also the conclusion which the Pythagoreans drew; for they attributed plurality and diversity to things as if they were one, just as they said that the properties of numbers are the same as the properties of natural beings.

150. Hence, Aristotle concludes that it is possible to learn this much from the early philosophers, who posited only one material principle, and from the later philosophers, who posited many principles.

Lesson 10 *Plato*

169. Here he shows to what class of cause the principles given by Plato are referred. He says that it is evident from the foregoing that Plato used only two kinds of causes. For he used as "one" cause of a thing the cause of its "whatness," i.e., its quiddity, or its formal cause, which determines its quiddity; and he also used matter itself. This is also evident from the fact that the Forms which he posited "are the causes of other things," i.e., the causes of the whatness of sensible things, namely, their formal causes, whereas the **formal** cause of the Forms themselves is what I call the *one*, which seems to be the substance of which the Forms are composed. And just as he holds that the one is the formal cause of the Forms, in a similar fashion he holds that *the great and small* are their **material** cause, as was stated above (159). And these causes—the formal and the material cause—are referred not only to the Forms but also to sensible substances, because [there is some subject of which] the one is predicated in the case of the Forms. That is to say, that which is related to sensible substances in the same way as the one is to the Forms is itself a Form, because that duality which relates to sensible things as their matter is the great and small.

170. Furthermore, Plato indicated the cause of good and evil in the world, and he did this with reference to each of the elements which he posited. For he made Form the cause of good and matter the cause of evil.

However, some of the first philosophers attempted to investigate the cause of good and evil, namely, Anaxagoras and Empedocles, who established certain causes in the world with this special end in view that by means of these causes they might be able to give the principles of good and evil. And in touching upon these causes of good and evil they came very close to positing the final cause, although they did not posit this cause directly but only indirectly, as is stated below (177).

Lesson 11

All the foregoing weak on FINAL cause

177. Here he gives the opinions of certain thinkers about the final cause. He says that in one sense the philosophers say that the goal for the sake of which motions, changes and activities occur is a cause, and in another sense they do not. And they neither speak of it in the same way, nor in the way in which it is a true cause. For those who affirm that intellect or love is a cause, posit these causes as good. For they said that things of this kind are the causes of things being well disposed, since the cause of good can only be good. Hence it follows that they could make intellect and love to be causes, just as the good is a cause. But **good** can be understood in two ways: (1) in one way as a **final cause**, in the sense that something comes to be for the sake of some good; and (2) in another way as an **efficient cause**, as we say that the good man does good.

Now these philosophers did not say that the foregoing causes are good in the sense that they are the reason for the existence or coming to be of some beings, which pertains to the intelligibility of the **final** cause, but in the sense that there proceeds from these causes—intellect and will—a kind of motion toward the being and coming-to-be of things; and this pertains to the intelligibility of the **efficient** cause.

178. In a similar way the Pythagoreans and Platonists, who said that the substance of things is the one itself or being, also attributed goodness to the one or being. Thus they said that such a reality, i.e., the good, is the cause of the substance of sensible things, either in the manner of a **formal** cause, as the Platonists maintained, or in the manner of a **material** cause, as the Pythagoreans claimed.

However, they did not say that the being and coming-to-be of things exists for the sake of this, i.e., the one or being; and this is something that pertains to the intelligibility of the **final** cause.

Hence, just as the **philosophers of nature** claimed that the good is a cause in the manner of an (+) efficient cause and not in that of a (~) formal cause, in a similar way the **Platonists** claimed that the good is a cause in the manner of a (+) formal cause, and not in that of a (~) final cause. The **Pythagoreans**, on the other hand, considered it to be a cause in the manner of a (+) material cause.

179. It is evident, then, that in one sense they happened to speak of the good as a cause and in another not. For they did not speak of it as a cause in its principal aspect but in a secondary one; because according to its proper intelligible structure the good is a cause in the manner of a final cause. This is clear from the fact that the good is what all desire.

Now that to which an appetite tends is a goal. Therefore according to its proper intelligible structure the good is a cause in the manner of a goal.

Hence those who make the good a cause in its principal aspect claim that it is a final cause. But those who attribute a different mode of causality to the good claim that the good is a cause but only in a secondary way; because they do not hold that it is such by reason of being good, but by reason of that to which good happens to belong by reason of its being active or perfective.

Hence it is clear that those philosophers posited a final cause only incidentally, because they posited as a cause something that is fitting to be an end, namely, the good. However, they did not claim that it is a cause in the manner of a final cause, as has been stated.

Conclusion

180. Here he draws the conclusion at which he chiefly aims: that the things established about the causes, both as to their number and their kinds, are correct. For the foregoing philosophers seem to bear witness to this in being unable to add another class of cause to those discussed above. This is one of the useful pieces of information resulting from the account of the foregoing views.

Another is that evidently the principles of things must be investigated in this science, either all those which the ancient philosophers posited, and which have been established above, or some of them. For this science considers chiefly the formal and final cause, and also in a sense the efficient cause.

Now it is not only necessary that the above views be discussed, but after this examination it is also necessary to describe the way in which each of these men has spoken (both in what sense their statements are acceptable and in what sense not), and how the statements which have been made about the principles of things contain a problem.

3. Various texts on causality

C.G. II, ch. 30

It is therefore clear from what we have said that the necessity which arises from an efficient cause in some cases depends on the disposition of the agent alone; but in others, on the disposition of both agent and patient. Consequently, if this disposition, according to which the effect follows of necessity, be absolutely necessary both in the agent and in the patient, then there will be absolute necessity in the efficient cause, as with things that act necessarily and always.

On the other hand, if this disposition be not absolutely necessary, but removable, then from the efficient cause no necessity will result, except on the supposition that both agent and patient possess the disposition necessary for acting. Thus we find no absolute necessity in those things that are sometimes impeded in their activity either through lack of power or the violent action of a contrary; such things, then, do not act always and necessarily, but in the majority of cases.

C.G. II, ch. 39, par. 3

Chance is found only in things that are possibly otherwise; and the source of this possibility is matter, and not the form, which indeed determines the matter, which is a reservoir of multiple possibilities.

C.G. III, ch.2, par.8

If an agent did not incline toward some definite effect, all results would be a matter of indifference for him. Now, he who looks upon a manifold number of things with indifference no more succeeds in doing one of them than another. Hence, from an agent contingently indifferent to alternatives no effect follows, unless he be determined to one effect by something. So, it would be impossible for him to act. Therefore, every agent tends toward some determinate effect, and this is called his end.

S.T. I, q.105, a.5

The operative powers which are seen to exist in things would be bestowed on things to no purpose, if things produced nothing through them. Indeed, all things created would seem, in a way, to be purposeless, if they lacked an operation proper to them; since the purpose of everything is its operation. For the less perfect is always for the sake of the more perfect. Consequently, just as the matter is for the sake of the form, so the form which is the first act is for the sake of its operation, which is the second act.

S.T. I, q.104, a.1

Every effect depends on its cause, so far as it is its cause. But we must observe that an agent may be the cause of the **becoming** of its effect, but not of its **being**. This may be seen both in artificial and in natural things. For the builder causes the house in its becoming, but he is not the direct cause of its being. For it is clear that the being of the house is a result of its form, which consists in the putting together and arrangement of the materials, and which results from the natural qualities of certain things. Thus the cook prepared the food by applying the natural activity of fire; and in the same way a builder constructs a house, by making use of cement, stones, and wood, which are able to be put together in a certain order and to conserve it. Therefore the being of the house depends on the nature of these materials, just as its becoming depends on the action of the builder.

The same principle applies to natural things For if an agent is not the cause of a form, as such, neither will it directly be the cause of the being which results from that form; but it will be the cause of the effect only in its becoming.

Now it is clear that of two things in the same species one cannot be essentially the cause of the other's (~) **form as such**, since it would then be the cause of its own form, since both forms have the same nature; but it can be the cause of (+) **this form** inasmuch as it is **in matter**—in other words, it may be the cause that this matter receives this form. And this is to be the cause of **becoming**, as when man begets man, and fire causes fire.

Thus whenever a natural effect is such that it has an aptitude to receive from its active cause an impression specifically the same as that in the active cause, then (+) the becoming of the effect depends on the agent, but not (~) its being.

S.T., I, q.46, a.2, ad 7

In efficient causes it is impossible to proceed to infinity per se. Thus, there cannot be an infinite number of causes that are **per se** required for a certain effect; for instance, that a stone be moved by a stick, the stick by the hand, and so on, to infinity. But it is not impossible to proceed to infinity **accidentally** as regards efficient causes; for instance, if all the causes thus infinitely multiplied should have the order of only one cause, while their multiplication is accidental; e.g., as an artificer acts by means of many hammers accidentally, because one after the other is broken. It is accidental, therefore, that one particular hammer should act after the action of another, and it is likewise accidental to this particular man as generator to be generated by another man; for he generates as a man, and not as the son of another man. For all men generating hold one grade in the order of efficient causes, viz., the grade of a particular generator. Hence it is not (~) impossible for man to be generated by man to infinity; but this would be (+) impossible if the generation of this man depended on this man, and on an elementary body, and on the sun, and so on to infinity.

4. BOOK VIII: PRINCIPLES OF SENSIBLE SUBSTANCES

Lesson 1

Sensible substance is matter, form, composite.

1686. Having linked up the foregoing discussion with the one that is to come, the Philosopher begins here to treat of sensible substances by investigating their principles. This is divided into two parts. In the first (1686) he establishes what is true concerning **matter and form**, which are the principles of **sensible substances**. In the second (1755) he considers the way in which they are united to each other ("It seems that we must").

In regard to the first he does two things. First, he shows that matter and form are principles of sensible substances. Second (1705), he deals with those points which must be investigated about each of these principles ("And we must not").

In regard to the first he does two things. First, he shows that matter is a principle of sensible substances; and second (1691), that the same is true of form ("But since that which has the character of a subject").

In regard to the first he does three things. First he shows what **matter** is by distinguishing it from the other ways in which substance is considered. Hence he says that all sensible substances have matter; and the reason is that all are in motion, and motion does not exist without matter.

1687. But it must be noted that in one sense *substance* means (1) matter, and in another (2) form, and in still another (3) the thing composed of these.

For *matter* is called substance, not as though it were a being considered to have actual existence in itself, but as something **capable** of being actual (and this is said to be a particular thing).

And *form*, which is also termed the intelligible structure because the intelligible structure of the species is derived from it, is called substance (1) inasmuch as it is something **actual**, and (2) inasmuch as it is **separable** from matter in thought but not in reality.

And the thing *composed* of these is called substance inasmuch as it is something "separable in an absolute sense," i.e., **capable of existing separately by itself** in reality; and it alone is subject to generation and corruption. For form and matter are generated and corrupted only by reason of something else.

And although the composite is separable in an absolute sense, yet some of the other things which are called substances are separable in thought and some are not. For a *form* is separable in thought because it can be understood without understanding individuating sensible matter; but *matter* cannot be understood without understanding form, since it is apprehended only inasmuch as it is in potentiality to form.

Or the, statements can mean that "according to the intelligible structure of substances," i.e., of forms, some are separable in their intelligible structure, as the objects of mathematics, and some are not, as natural forms.

Or again it may mean that there are certain separate forms existing without matter, about which he will establish the truth later on (2447-2454).

1688. Second, he says that in sensible substances we must posit *matter* as **substance** and **subject**. For in every change between contraries, there must be a subject common to the termini of the change. For example, in change of **place** there is a common subject which is now here and afterwards somewhere else; and in **growth** there is a common subject which now has so much quantity and afterwards is smaller (if the change is decrease) or greater (if it is increase). And in

alteration there is a common subject which is now healthy and afterwards diseased. Hence, since there is **substantial change**, that is, generation and corruption, there must be a common subject which underlies the opposite changes of generation and corruption. And this is the subject for the termini that have been given, i.e., form and privation, so that sometimes this subject is actual by reason of a form, and sometimes it is the subject of the privation of that form.

Lesson 2

1697. For just as in the genus of substance the *difference*, which is predicated of the genus and qualifies it in order to constitute a species, is related to the genus as **actuality or form**, so also is this true in other definitions.

(~) For we must not understand that difference is form or that genus is matter, since genus and difference are predicated of the species but matter and form are not predicated of the composite. (+) But we speak in this manner because a thing's genus is derived from its material principle, and its difference from its formal principle.

The genus of man, for example, is animal, because it signifies something having a sensory nature, which is related as matter to intellectual nature from which rational, the difference of man, is taken. But rational signifies something having an intellectual nature.

It is for this reason that a genus contains its differences potentially, and that genus and difference are proportionate to matter and form, as Porphyry says . And for this reason too it is said here that "actuality," i.e., difference, is predicated "of matter," i.e., of the genus; and the same thing occurs in other genera.

Lesson 3

1708. Then the Philosopher shows the result to which the aforesaid search leads. He says that, while the question whether a specific name signifies the composite substance or only the form, (+) makes a difference in regard to something else, (~) it makes no difference to the investigation of sensible substance. For it is evident that a sensible substance is composed of matter and form.

1709. (+) Now to what kind of thing it makes a difference, whether to those in this state or in another, he makes clear next. For it is obvious that if there is something which is only form or actuality, its essence "consists of this," i.e., the thing and its essence will be identical, as a soul is identical with its essence, or is its own quiddity.

But if a thing is composed of matter and form, then in this case the thing itself and its essence will not be the same; for example, a man and the essence of a man are not the same, unless perhaps a man is said to be only a soul, as was held by those who say that specific names signify only the form. Thus it is evident that something does exist whose essence is the same as itself, namely, whatever is not composed of matter and form but is **only a form**.

1710. The reason for this position is that essence is what the definition signifies, and the definition signifies the nature of the species. But if there is something which is composed of matter and form, then in that thing there must be some other principle besides the nature of the species. For since matter is the principle of individuation, then in anything composed of matter and form there must be certain individuating principles distinct from the nature of the species. Hence such a thing is not just its own essence but is something in addition to this. But if such a thing exists which is only a form, it will have no individuating principles in addition to the nature of its species. For a form that exists of itself is individuated of itself. Therefore this thing is nothing else than its own essence.

1711. It is clear, then, that if the specific name signifies **only the form**, the essence of anything will be (+) the same as its being, as a man will be his essence, and a horse its essence, and so also will all other things of this kind.

But if specific names signify things **composed** of matter and form, then such things will (~) not be the same as their essence.

1727. He gives the fourth way in which forms are like numbers. He says that just as a number does not admit of (~) more or less, neither does substance in the sense of form, although perhaps substance in the sense of matter does admit of such difference. For just as the concept of number consists in some limit to which neither addition nor subtraction may be made, as has been pointed out (1723), so also does the concept of form.

But things admit of (+) more or less because of the fact that matter participates in a form in a more or less perfect way. Hence too whiteness does not differ in terms of more or less, but a white thing does.

Lesson 4

Matter

1743. He shows how matter is ascribed to **accidents**. He says that those things which exist by nature yet are not substances but accidents, (~) do not have a **matter** from which they come to be, but (+) they have a **subject**, which is the substance. Now a subject bears some likeness to matter inasmuch as it is receptive of an accident. But it differs from matter in this respect, that while matter has actual being only through form, a subject is not constituted in being by an accident.

1744. Therefore, if one asks what is the cause of an eclipse, one cannot give its (~) **matter**, but the moon is the (+) subject undergoing this modification.

And the **efficient** cause which extinguishes the light is the earth placed directly between the sun and the moon.

But perhaps it is impossible to give the **final** cause; for those things which pertain to **defect** do not exist because of some end but are rather a result of natural necessity or of the necessity of the efficient cause. However, he says "perhaps" because an investigation of the causes of particular events

which take place in celestial movements is especially difficult.

And the **formal** cause of an eclipse is its definition. But this definition is not clear unless the [efficient] cause is given therein. Thus the definition of a lunar eclipse is the privation of light in the moon. But if one adds that this privation is caused by the earth being placed directly between the sun and the moon, this definition will contain the [efficient] cause.

Lesson 5

1760. Then he solves the above problem in regard to the objects of *mathematics*. He says that matter is of two kinds, sensible and intelligible.

Sensible matter is what pertains to the sensible qualities, hot and cold, rare and dense and the like; and with this matter natural bodies are concreted. Now the objects of mathematics abstract from this kind of matter.

But intelligible matter means what is understood without sensible qualities or differences, for example, what is continuous. And the objects of mathematics do not abstract from this kind of matter.

1761. Hence, whether in the case of sensible things or in that of the objects of mathematics, their definitions must always contain something as matter and something as form; for example, in the definition of a mathematical circle, a circle is a plane figure, plane is as matter and figure as form. For a mathematical definition and a natural definition are each one thing on the same grounds (even though there is no agent in the realm of mathematical entities as there is in the realm of natural entities), because in both cases one part of the definition is as matter and the other as form.

1762. He solves the above problem in regard to the things that are **wholly separate from matter**. He says that in the case of all those things which do not have intelligible matter, as the objects of mathematics have, or sensible matter, as natural bodies have, that is to say, in the case of the separate substances, each one of these is at once one thing [individuated by form].

For each of those things which have matter is not at once one thing, but they are one because unity comes to their matter. But if there is anything that is only a form, it is at once one thing, because it is impossible to posit in it anything prior in any order whatever that must await unity from a form.

1763. He gives this example: the ten categories do not derive being by adding something to being in the way that species are established by adding differences to genera, but each is itself a being. And since this is true, it is evident that being does not await something to be added to it so that it may become one of these, i.e., either a substance or quantity or quality; but each of these from the very beginning is at once either a substance or quantity or quality.

This is the reason why neither unity nor being is given as a genus in definitions, because unity and being would have to be related as matter to differences, through the addition of which being would become either substance or quality.

1764. Similarly, that which is wholly separate from matter and is its own essence, as was stated above (1708), is at once one thing, just as it is a being; for it contains no matter that awaits a form from which it will derive being and unity. In the case of such things, then, there is no cause that makes them one by means of motion.

However, some of them have a cause which supports their substances without their substances being moved [separate simple substances depend on God for existence], and not as in the case of things subject to generation, which come to be through motion. For each of them is at once a particular being and a one, but not so that being and unity are certain genera or that they exist as individuals apart from singular things, as the Platonists held.