

CHAPTER ONE

Athens

ARISTOTLE (384–322 BC) SAID, “Knowledge is the object of our inquiry, and men do not think they know a thing till they have grasped the ‘why’ of it (which is to grasp its primary cause).”¹ He was not the first to raise the question of causation, for it was nigh an obsession of his philosophical predecessors, back through his teacher Plato (ca. 429–347 BC) to Socrates (469–399 BC), and to the earlier “pre-Socratic” thinkers, including Empedocles (ca. 495–435 BC), Anaxagoras (ca. 510–ca. 428 BC), and the atomist Democritus (ca. 460–ca. 370 BC). They all grasped that in some sense causation—what it is that makes things happen—is (or is often taken to be) both a backward-looking matter and a forward-looking matter.² The nail is driven into the piece of wood. Backward-looking in the sense that this happens because a hammer was picked up and used to hit the head of the nail; forward-looking in the sense that this happens because the builder wants to tie the planks together to support a roof. The builder did this “on purpose” or “for a purpose.” He wanted that end. A roof was something of *value* to him.

I shall argue that this forward-looking side to causation—the subject of our inquiry—lends itself to three different approaches. I do not pretend to originality in spotting these

approaches. Others, for instance, R. J. (Jim) Hankinson and Thomas Nagel, have certainly remarked on this triune side.³ It is in tracing the way that it persists that makes the story so interesting and illuminating. The first approach, often known as “external” teleology, is the most obvious and intuitively plausible. It involves a mind, whether human or divine or something else. “For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life” (John 3:16).⁴ God, right now, let Jesus die on the cross, so that you, the sinner, should have everlasting life in the future. The second approach, often known as “internal teleology,” is a bit trickier. It involves a kind of life force in some sense, something that need not be conscious, and actually in the broader sense need not even be alive. It might be more a kind of principle of ordering about the world, something that makes everything essentially end-directed. When we see it being argued for, we shall get a better sense of what it is all about. These two notions of purpose, of teleology, go back readily to the Greeks. The third kind of approach we might call “eliminative” or, more positively, “heuristic” teleology, seeing forward-looking causation—purpose—as in some sense purely conceptual, something we might use to understand the world but in no sense constitutive of the world. This label would apply to—or at least is anticipated in—the approach of Democritus and comes out more vividly in the (several centuries later) poetry of the Roman Lucretius (ca. 99–ca. 55 BC). But it is not until the modern era that this approach could be developed fully.

With respect to the first two approaches, it is not always easy to tell if one has either external or internal teleology. In Emily Dickinson’s poem, is there a designer god behind everything or is it all a matter of an impersonal force, an Immanent Will (as it has sometimes been called)? What we can say is that Plato offered the first full discussion of external teleology and Aristotle the first full discussion of internal teleology, with the atomists at the least the forerunners of the heuristic option.

Plato

There are two main sources for Plato's thinking about purpose, about teleology. The first is in the *Phaedo*, the dialogue about Socrates's last day on Earth. It is a middle dialogue, and given the nature of the discussion is generally considered a vehicle for Plato's own thinking—apart from anything else, Plato notes explicitly that he himself was not present, which gives us a clue that there has to be some element of creativity—although there is a comparable discussion attributed to Socrates himself by Xenophon (ca. 430–354 BC), and a version of the argumentation may go back to Anaxagoras. Surrounded by the young men who are his followers, much of the discussion Socrates directs is (hardly surprisingly) about key issues, such as the nature of the soul—more on this shortly—and questions about existence beyond this life. Almost in passing, Socrates raises the question of the deity. It is not so much a question of offering a formal proof but in showing how we need such a concept in order to make sense of the ways in which we understand things.

Normally, such an issue doesn't arise. "I thought before that it was obvious to anybody that men grew through eating and drinking, for food adds flesh to flesh and bones to bones, and in the same way appropriate parts were added to all other parts of the body, so that the man grew from an earlier small bulk to a large bulk later, and so a small man became big."⁵ This is backward-looking causation, that is, what we have seen called "efficient causation." Plato acknowledges that this is not a bad explanation—we do get bigger thanks to eating and drinking—but it is in some sense incomplete. Why would one bother to eat and drink? Why would one want to grow and put on weight? See here how the notion of *value* is coming in. What is the point of doing something? What's the purpose? Why do we want the end result? Here we need to switch to forward-looking causation or (what within the Aristotelian system was called) "final cause." We are—or rather will be—better off if we grow. This is crucial.

Something happens that we *value*. Which is just fine and dandy, but why should it happen? Why doesn't eating and drinking make us lose weight? "One day I heard someone reading, as he said, from a book of Anaxagoras, and saying that it is Mind that directs and is the cause of everything. I was delighted with this cause and it seemed to me to be good, in a way, that Mind should be the cause of all. I thought that if this were so, the directing Mind would direct everything and arrange each thing in the way that was best."⁶ So now one has a guide to discovery. "Then if one wished to know the cause of each thing, why it comes to be or perishes or exists, one had to find what the best way was for it to be, or to be acted upon, or to act."⁷

Note that we have a heuristic here but more than this, although it is more a presupposition than an explicit proof. Things don't just happen. They are ordered for the best, and this is done by a mind—or rather by a Mind. The teleology in this sense is external—imposed upon the world from without.

Atomist Interlude

Pause for a moment, to dig a little more deeply. You have features, let us say teeth or hands or whatever. These are brought about through efficient causes, the physiological effects of eating and drinking. They also have purposes or ends, what we are going to call final causes. These features are of value. And God or a Mind is being invoked to explain everything. The Design Argument, although note that truly we have a two-part argument here. First, *to* the design-like nature of the world. Second, *from* this nature to a God. Plato more or less takes the first part of the argument as a given and is focused on the second part. Aristotle, as we shall see, as a sometime very serious biologist, has more focus on the first part. In order to bring out these two moves, let me make continued use of the fact that I am not now writing a straight history of philosophy but a history of ideas

directed toward the present, and so I have greater freedom to move back and forth in time. Interrupt Plato and turn for a moment for contrast and illumination to the atomists. They argued that we have an infinite universe, infinite time, and nothing but particles—atoms—buzzing around in space or the void. Every now and then they will join up, and first we have disembodied parts—an eye here and a leg there. In the words of Lucretius, writing in the tradition of the materialist Epicurus (341–270 BC), who in his physics followed Democritus:

At that time the earth tried to create many monsters
with weird appearance and anatomy—
androgynous, of neither one sex nor the other but
somewhere in between; some footless, or handless;
many even without mouths, or without eyes and blind;
some with their limbs stuck together all along their body,
and thus disabled from doing harm or obtaining anything
they needed.

These and other monsters the earth created.

But to no avail, since nature prohibited their development.

They were unable to reach the goal of their maturity,
to find sustenance or to copulate.⁸

Thus far, nothing works. It is just a mess, of no value whatsoever. But then, given infinite time, things joined up in functioning ways.

First, the fierce and savage lion species
has been protected by its courage, foxes by cunning, deer by
speed of flight. But as for the light-sleeping minds of
dogs, with their faithful heart,
and every kind born of the seed of beasts of burden,
and along with them the wool-bearing flocks and the
horned tribes,
they have all been entrusted to the care of the human race
(5.862–67)

This obviously is a direct challenge to the second move in the Design argument. The immediate objects of Lucretius's poem are probably the Stoics (see below), but Plato is in direct line. In the *Sophist*, having invoked a deity to explain the design-like nature of everything, animals, plants, the earth itself, he asks bluntly, "Are we going to say that nature produces them by some spontaneous cause that generates them without any thought, or by a cause that works by reason and divine knowledge derived from a god?"⁹ The first disjunct is the atomist's happy reply. No need to invoke a god or whatever to explain purpose—"intelligence, along with color, flavor, and innumerable other attributes, is among the properties that supervene on complex structures of atoms and the void."¹⁰ Which in turn rather implies that the atomists allow the first part of the argument. Things, organisms in particular, show purpose. They have features serving their ends (fierceness, cunning, running ability) or our ends (faithfulness, strength for work, wool coats, milk and meat). Lucretius admits this, but reluctantly. It is certainly not part of reality. Eyes were not made for seeing or legs for keeping us upright. It is rather that the eyes and legs appeared and then were put to use. To think otherwise is to get things backward.

All other explanations of this type which they offer
are back to front, due to distorted reasoning.

For nothing has been engendered in our body in order that
we might be able to use it.

It is the fact of its being engendered that creates its use.

(5.832-35)

Lucretius certainly accepted end-directed thinking when it comes to human artifacts.

Undoubtedly too the practice of resting the tired body
is much more ancient than the spreading of soft beds;
and the quenching of thirst came into being before cups.

Hence that these were devised for the sake of their use is credible, because they were invented as a result of life's experiences. (5.848–52)

It is just that he didn't want this analogy carried over to the living world. No values out there.

Quite different from these are all the things which were first actually engendered, and gave rise to the preconception of their usefulness later.

Primary in this class are, we can see, the senses and the limbs.

Hence, I repeat, there is no way you can believe that they were created for their function of utility.

(5.853–57)

Since he feels the need to warn us against it, Lucretius obviously recognizes that people think of organisms (or their parts) as having purposes. He is not prepared to deny that the world, the organic world in particular, shows design-like features. As an aside, therefore, treating the atomists in their own right and not just as a foil for Plato and Aristotle, perhaps rather than saying that atomists like Lucretius gave a heuristic understanding to purpose—something positive in the sense that it leads to insights, and that we shall see in later thinkers—it is more accurate to say that (outside human artifacts), they didn't really think it existed at all in reality (in the sense of having actual design or purpose) and only comes in as a sign of weakness in thinking. Either way, it is this approach that Plato (and almost certainly Socrates) thought improbable to the point of impossibility. No matter how infinite time and space may be, it isn't going to happen. To use a modern analogy, no number of monkeys randomly striking the keys of no number of typewriters is ever going to turn out the *Collected Works of William Shakespeare*, or to use a more contemporary example of the Roman orator and philosopher Cicero (106–43 BC), no number of letters of the alphabet

shaken up in a bag are ever going to produce the *Annals* of Ennius, an epic poem about Roman history.

The World Soul

The context here is with living beings. As the discussion goes, Plato makes it clear that he is happy to extend forward-looking thinking to inanimate objects also; they too can be considered teleologically in terms of the designing intelligence deciding what is best for them. We can ask about purposes, as long as we can see value. Apparently, it would be perfectly proper to say that the earth is round rather than flat because it is in the middle of the universe, and that this is the best possible place for it to be. In other words, the earth is round in order that it might be in the middle of the universe. Unfortunately, in Plato's opinion, Anaxagoras, who has been noted as a forerunner in thinking about these sorts of things, gave up on the job and didn't really try to carry things through thoroughly. Having introduced the notion of end causes, he rather ignored them. In another dialogue, the *Timaeus*—very influential for this, or rather the first part, was virtually the only actual dialogue known to later generations until well into the Middle Ages—Plato himself took up the job and showed how it is that Mind orders everything for the best. Well known is the central claim of the *Timaeus* that the world—meaning the universe—is or was essentially disordered and then a designing mind, or Mind, imposed functioning order upon it. There is discussion about whether this Mind—what Plato called the Demiurge—was in fact a being who acted temporally, imposing its will upon an existing universe, one that had no beginning and will have no end. Or is it more a principle of ordering that always had its will impressed upon physical reality? Most of a philosophical vein have gone for the second interpretation, but there have been those (including Aristotle) opting for reading Plato as positing an actual creation. The Stoics (of whom more shortly) liked this idea for it tied in with their belief of eternal

recurrence—worlds have beginnings and ends, and then start all over again.¹¹ No real matter to us. Either way, the Demiurge is a designer from the already-existing rather than a Creator from nothing, as is the Christian God.

The Demiurge is external to the world, but it goes one step further than perhaps necessary, for it imbues the world with a soul of its own. By “world,” as is made clear by a later work, is meant the universe—it is quite false “that all the bodies that move across the heavens were mere collections of stone and earth.”¹² By “soul” here (and elsewhere) Plato is not so much thinking of the Christian sort of soul, something purely mental and conscious—although that is certainly involved, especially intelligence—but also (as comes across clearly in *The Republic*, where Plato distinguishes but recognizes the appetitive part of the soul from the parts producing thinking and courage) something of the general life force that drives organisms forward. So, in other words, the universe is a living entity and ipso facto teleological thinking about its parts, both what we would normally judge the living and the nonliving, is not just appropriate but demanded: “the world is an intelligent being with its own soul, an arrangement ensuring that it is intelligently governed all the way down.”¹³ And value is right at the center of this. In *Candide*, Voltaire, through the mouthpiece of the philosopher Dr. Pangloss—who manages to get the clap and consequent rotting of virtually all of his bodily parts—pokes fun at the claim of Gottfried Leibniz (1646–1716) that this is the best of all possible worlds. The great German came by his thinking honestly, because this is at the heart of Plato’s value-impregnated vision of the world. “Well, if this world of ours is beautiful and its craftsman good, then clearly he looked at the eternal model.”¹⁴ The reference here was to the Platonic Theory of Forms, most clearly discussed in *The Republic*. Deeply influenced by the School of Pythagoras, which combined a perhaps expected veneration of mathematics with a perhaps unexpected worship of the Sun, Plato argued that just as in this world we have physical objects

(including organisms) that in some real sense owe their very being to the Sun, connecting all together through being the source of energy and also the power through which we can see the objects, so there is a world of rationality where we find ideal archetypes (Forms or Ideas) with the ultimate, the Form of the Good, analogously to the Sun connecting all together through giving the Forms their very being and enabling us through the intellect to know them.

It is this Form of the Good that was the Demiurge's guide. "Now surely it's clear to all that it was the eternal model he looked at, for, of all the things that have come to be, our universe is the most beautiful, and of causes the craftsman is the most excellent. This, then, is how it has come to be: it is a work of craft, modeled after that which is changeless and is grasped by a rational account, that is, by wisdom."¹⁵ Notice the emergence of the major Greek theme, of the importance of wisdom, of rational thought. This is the sort of thing that made Tertullian very tense and is a constant worry in Christian (especially Protestant) thought, where the stress is on faith, something equally open to the untutored. The end for Plato, the ultimate value or values that make sense of our world of experience, could never be simply pig pleasures—food and drink and a nice wallow in the mud, literal or metaphorical. There is a hierarchy of values—of purposes—and wisdom, intelligence, and rationality are at the top. The Demiurge "put intelligence in soul, and soul in body, and so he constructed the universe."¹⁶

Aristotle

Aristotle, known as the "Stagirite" because of his origins, was, in the tradition of the best students, both follower and critic of his teacher Plato. He was a follower because with Plato he saw things in an organic mode, more so in fact because he was, for some period of his life, a hands-on biologist. Hence, like Plato, he was convinced absolutely and utterly that teleological think-

ing is not merely permissible but obligatory. “Nature never makes anything without purpose.”¹⁷ He was a critic because he denied the outside Mind or Designer or Demiurge and wanted nothing of world souls—especially not the latter, for reasons that we shall see are rather odd, taken on their own, but that make perfect sense within Aristotle’s system. In other words, because he did not think teleology merely heuristic, although he certainly did not deny that side to teleology,¹⁸ he was rather pushed toward our second option, that teleology is in some sense a function of, necessitated by, a kind of underlying end-directed force or forces—although we shall have to unpack the meaning of that. The main point is that when we talk of purpose, we are in some sense talking of something objective rather than just subjective, although, again, what that means precisely needs to be analyzed.¹⁹

Start with Aristotle’s famous fourfold categorization of causes.²⁰ Take the making of a statue, let us say, of an unknown British soldier in the Great War. First there is (using this term in a slightly tighter sense than before) the “efficient cause”—the sculptor or modeler who made the statue. Then there is the “material cause”—the material out of which the statue was made, marble or bronze perhaps. Third, there is the “formal cause”—the actual shape of the statue. It would not be the soldier if you gave it four legs. You are almost certainly going to put it in uniform, and you are not going to put a German helmet on its head. And of great interest to us, the “final cause”—the reason you made or commissioned the statue, the purpose. Perhaps it was to mark the hundredth anniversary of the Battle of the Somme, which began on July 1, 1916, the dreadful day that saw 60,000 British casualties, including 20,000 dead. The battle that led to years of ill health and the eventual premature death of my paternal grandfather.

Great thinker that he was, Aristotle did not feel himself constrained by these categories. Formal causes, for instance, are much bound up with final causes. You are hardly going to mark the

Battle of the Somme if the form of your statue looks remarkably like Sophia Loren. In his extended discussion of animals, which is clearly at the heart of the very notion of teleological explanation, and where he shows his great concern with what I have termed the first part of the design argument—establishing the essentially purpose-like nature of organisms—Aristotle collapses the causes down to two: efficient and final. He speaks of things coming about by necessity, meaning that they are produced by efficient causes. He speaks also about things occurring for the sake of ends. Any adequate analysis must deal with both of these types of cause. “In dealing with respiration we must show that it takes place for such or such a final object; and we must also show that this and that part of the process is necessitated by this and that other stage of it.”²¹ Notice that, as always, value is the underlying theme. The very essence of showing the final object of respiration is that of demonstrating that the process is of value to the organism that is respiring.

Plato is a dualist with respect to the body-mind problem. Somewhat analogous to the later (seventeenth-century) philosopher René Descartes—of whom more later—Plato thought the body and the mind or soul are two separate entities or substances but interconnected, for the soul is not just the mind but the vital principle animating the body, and as such is in some sense located in the body. This, we shall see, was not Descartes’s position, but there is overlap in the fact that mind can or should exist independently of the body—the main thrust of the *Phaedo* is to show how the soul can survive death. Aristotle’s position is more subtle and complex.²² It is his notion of form that does the heavy lifting here. Or to use a term that we shall see has had a long shelf life, “organization”: “The body so described is a body which is organized.”²³ Just as the shape of the soldier—its form—gives meaning to the statue, so the form of the organism is that which gives it life and meaning. It is that which gives the organism its soul—with the proviso that there are vegetative souls for plants, animated souls for animals, and intelligent souls for humans. But even at the vegetative level, organisms are not just bumps on

a log. In his major discussion of the topic of soul, Aristotle calmly runs together the formal cause with the final cause: "It is manifest that soul is also the final cause. For nature, like thought, always does whatever it does for the sake of something, which something is its end."²⁴

In the case of humans, we can see readily how we as organisms strive to our final causes. We have a goal and thanks to intelligence we can aim for it, even if we do not always achieve our goal. Our parts serve the ends of the whole, and the whole has clearly animal functions, like survival and reproduction, but also higher aims. In the cases of lower organisms, the parts likewise serve the ends of the whole and the whole likewise that of survival and reproduction. Is there any further aim, specifically, ends with respects to humans? Do cows exist for the purposes of humans? Does the moon? There is divided opinion on this, but in one sense at least, Aristotle is unambiguous about our importance. Apparently, we may infer "that, after the birth of animals, plants exist for their sake, and that the other animals exist for the sake of man . . . Now if nature makes nothing incomplete, and nothing in vain, the inference must be that she has made all animals for the sake of man."²⁵ As we shall see, this is not the end of the story.

What is clear is that, in the case of nonhumans and in the case of human parts, making allowance for human guidance through agriculture, the ends are achieved without thought and intelligence. Unlike Plato, there is no overall guiding, conscious design. That said, Aristotle does seem to appeal to some kind of vital force, an end-directed motivator, which raises the question: Why is it of general value for plants and animals to reproduce? Even if ultimately it is for our benefit, one looks for an immediate cause, something that gives them the drive, as it were, that is then going to benefit us. One suggestion Aristotle makes, which we shall see fits in with his overall world picture, is that in reproduction, although organisms do not become eternal, they get as close to the eternal as possible, and that in itself is a good. "The acts in which [the soul] manifests itself are reproduction and the

use of food, because for any living thing that has reached its normal development . . . the most natural act is the production of another like itself, an animal producing an animal, a plant a plant, in order that, as far as nature allows, it may partake in the eternal and divine. That is the goal to which all things strive, that for the sake of which they do whatsoever their nature renders possible.”²⁶

It is important to get a handle on what is meant by “force” in such a context as this. There is a bit of a tendency to think of it rather like the background setting that makes the *Hound of the Baskervilles* such a terrifying story—a low-lying fog over the mire, a sort of semi-ethereal but physical thing enveloping everything. And it is true that this kind of idea can be found in some Aristotle-influenced systems. In chapter 8, we shall look at the French philosopher Henri Bergson (1859–1941), who spoke of some kind of life force that he called the “*élan vital*.”²⁷ Suffice it to say here that this really does seem to have physical existence in some sense. It certainly has such an existence in the thinking of the novelist D. H. Lawrence, whose masterworks, the sequential novels *The Rainbow* (1915) and *Women in Love* (1921), are thoroughly infused with Bergsonian philosophy. Lawrence metaphorically translates the *élan vital* into blood, and again and again it functions as a kind of life force.

Her warm breath playing, flying rhythmically over his ear, seemed to relax the tension. She could feel his body gradually relaxing a little, losing its terrifying, unnatural rigidity. Her hands clutched his limbs, his muscles, going over him spasmodically.

The hot blood began to flow again through his veins, his limbs relaxed.

“Turn round to me,” she whispered, forlorn with insistence and triumph.

So at last he was given again, warm and flexible. He turned and gathered her in his arms.²⁸

To be repeated, many, many times!

This is not what is being supposed by Aristotle. For him, it is more a principle of ordering, not so much a thing but a relationship. Think of a right-angled triangle. For a Platonist, what is going on here is readily understandable. There is a Form, or something akin to a Form, that is a right-angled triangle, and triangles of this world conform to it—they “participate” in the Form. Likewise with purpose. For Plato, there is something out there, the Demiurge, which is itself bound up with the Form of the Good, something that is imposing order on the world. The Aristotelian is not a realist like this, nor is he or she a nominalist in thinking that it is all words or thought (by us) that confers its nature on the triangle or likewise the purposes of the world. The Aristotelian is not an eliminator. It is more a matter of a principle—that is why the link between the soul and the formal cause is so crucial. It is the form, in the Aristotelian sense, that gives the structure—and with it the meaning. The statue of the British “Tommy,” a term used of the private soldier in the war, is not in itself the final cause, but by virtue of what it is, it points that way. Memory and commemoration. It is a candidate for our heartbroken respect. And note as always, there is value. We prize the statue because it points to an end that is good—memory of sacrifice and suffering, and determination to prevent its reoccurrence.

The World Picture

The living world is at the heart of Aristotelian end-directed thinking.²⁹ This comes through clearly in the *Physics*, shortly after he has introduced the fourfold causal division. “The necessity in nature, then, is plainly what we call by the name of matter, and the changes in it. Those causes must be stated by the student of nature, but especially the end; for that is the cause of the matter, not *vice versa*.”³⁰ Can we be sure that there is this kind of necessity? Aristotle is eager to show that what is happening is

not something that demands or involves conscious thought. “This is most obvious in the animals other than man: they make things neither by art nor after inquiry or deliberation . . . If then it is both by nature and for an end that the swallow makes its nest and the spider its web, and plants grow leaves for the sake of the fruit and send their roots down (not up) for the sake of nourishment, it is plain that this kind of cause is operative in things which come to be and are by nature.”³¹ So how do we analyze things? “And since nature is twofold, the matter and the form, of which the latter is the end, and since all the rest is for the sake of the end, the form must be the cause in the sense of that for the sake of which.”³² There is, incidentally, an almost proto-Aristotelian passage in Plato’s *Philebus* that would fit in here:

I hold that all ingredients, as well as all tools, and quite generally all materials, are always provided for the sake of some process of generation. I further hold that every process of generation in turn always takes place for the sake of some particular being, and that all generation taken together takes place for the sake of being as a whole.³³

What of the rest of existence? Lower down, as it were, the material world does not have soul or souls. It couldn’t have really. Aristotle subscribed (as did Plato) to the idea of the four elements: earth, water, air, and fire. (There is also the ether up above.) These elements just don’t have the kind of integration leading to persistence and reproduction, the very things that we associate with organisms. This is far from saying that final-cause talk is inappropriate, apart from the form that might be imposed from without like the form of the statue. Aristotle (no less than Plato) is firmly committed to “global” or “cosmic” teleology. Right in the middle of his discussion of animal purpose, he stops to affirm that cosmological purpose is, if anything, more basic.

Moreover, nothing abstract can be an object studied by physics, because nature does everything for a purpose. For just as

in artifacts art is present, in things themselves there appears another such principle and cause, which, like the hot and the cold, we have from the universe. Hence it is more reasonable for the heaven to have come to be by the agency of such a cause, if it has come to be and to be because of such a cause, than for mortal animals.³⁴

He explains that animals live and die, and change through time, whereas the heavens stay constant, and this reaffirms the centrality of the physical over the organic when it comes to final-cause thinking.

Aristotle saw a natural ordering of the elements, with earth at the center and then the others respectively moving outward. He also saw them as moving in some sense to reach their appointed places—this is where they should be. That is why heavy objects fall to the ground and smoke rises, why the oceans are above the seabed, and the winds above the water. They cannot stay at rest because of the actions of organisms and the disruptive effects of the heavens above, but they are directed to their proper places: “upward locomotion belongs naturally to fire and downward to earth, and the locomotions of the two are certainly contrary to each other.”³⁵ This is why final-cause talk is appropriate. Although Aristotle is not naive. He is fully aware that it is at times proper to speak of things as being accidental or contingent. He doesn’t think that an eclipse of the moon is necessarily for any great purpose. Is this just an exception to final-cause thinking? Not really. The eclipse as eclipse is not a substance. Heavenly beings move in circles because that is the perfect figure and so that is part of their nature. But the effects are not substances and so not necessarily explicable in terms of final cause. “Nor does matter belong to those things which exist by nature but are not substances; their substratum is the *substance*. E.g. what is the cause of eclipse? What is its matter? There is none; the *moon* is that which suffers eclipse. What is the moving cause which extinguished the light? The earth. The final cause perhaps

does not exist.”³⁶ Finally, the heavens themselves. Aristotle thought the stars were living beings, perpetually moving in circles, held in place by concentric, transparent, celestial spheres (the ether). “There is one heaven” only, that is ungenerated and eternal, and “its movement is regular.”³⁷ This is the perfect motion and that in itself is reason enough for their existence. And so to the ultimate cause of it all, the Unmoved or Prime Mover. Beyond the sphere of the stars—not in the physical sense but in the metaphysical sense of having no place—exists the ultimate Being, that which is cause of itself and infinitely good. “The first mover, then, of necessity exists; and in so far as it is necessary, it is good, and in this sense a first principle.”³⁸ It is that which motivates everything. “There is, then, something which is always moved with an unceasing motion, which is motion in a circle; and this is plain not in theory only, but in fact. Therefore, the first heavens must be eternal. There is therefore also something which moves them. And since that which is moved and moves is intermediate, there is a mover which moves without being moved, being eternal, substance, and actuality.”³⁹ This explains the reproduction of plants and animals. They are becoming as close to the eternal as possible. So in an important way, Bergson and Lawrence are not completely out of line. They both sensed that what is at work here is something dynamic. It is not something static— $2 + 2 = 4$ was true, is true now, and will always be true, unchanging—but a real force, something organic, changing and striving toward an end. That is the real import of the blood metaphor. It is not something just existing, a substance, but something driving people forward, pushing them toward their goals. Although to be candid, I am not sure that what Lawrence had in mind was quite the state of intellectual ecstasy prized by Aristotle.

At times, Aristotle suggests that there are as many Unmoved Movers as there are celestial spheres, fifty-five in total number, but his general philosophy is that there is and can be only one primary mover. This Unmoved Mover is not a Creator God, as

for the Jew or the Christian. Nor is it a designer God, the Demiurge of Plato. It is cause in the sense of final cause, that which is the end or goal for the cosmos as a whole: “it is vital to realize that the [Prime Mover] is a cause only in so far as it is the object of desire. It does not directly impart motion to the spheres; rather it excites in them the desire to emulate, in so far as they are capable of doing so, its state of pure intellectual activity.”⁴⁰ In Aristotle’s words: “And the object of desire and the object of thought move in this way; they move without being moved. The primary objects of desire and of thought are the same. For the apparent good is the object of appetite, and the real good is the primary object of wish.”⁴¹ How can this be, for almost paradoxically the Unmoved Mover is probably unaware of our existence? It is doing the only thing a perfect thing can do, namely, contemplate perfection, which means that by its very nature it is contemplating itself! “Are there not some things about which it is incredible that it should think? Evidently, then, it thinks that which is most divine and precious, and it does not change, for change would be change for the worse, and this would already be a movement.”⁴² Continuing: “Therefore it must be itself that thought thinks (since it is the most excellent of things), and its thinking is a thinking on thinking.”⁴³

On the surface, this is decidedly odd. I suspect that we have all known people who are pretty good at contemplating themselves and only themselves—I have one or two young relatives who have made an art form of this—and while we might regard them with amusement or irritation, we hardly regard them with respect. It follows naturally within the Aristotelian system and gives us good indication of how highly Aristotle, and the Greeks generally, regarded the life of pure thought, of ultimate rationality. It explains why there could be no world soul for Aristotle. He is prepared to think of the world organically, as an army, for instance. Asking about how the universe is good, he invokes the military. “For the good is found both in the order and in the leader; and more in the latter; for he does not depend on the

order but it depends on him.”⁴⁴ The household is another metaphor used.⁴⁵ Not a world soul, however, for this would mean that the Unmoved Mover was concerning itself with the well-being of physical things. Notice how, introducing the military metaphor, Aristotle stresses how order depends on the leader rather than the leader caring about the troops. The nature of the Unmoved Mover explains also why—perhaps almost callously to us who have been soused in other philosophies—Aristotle regards the highest aim of humankind to be that of rational reflection. Not something one would normally expect to occur (as it does) in the middle of a work on ethics. It is in this activity that we most directly aim to match the activity of the perfect being, the Unmoved Mover.

If happiness is activity in accordance with virtue, it is reasonable that it should be in accordance with the highest virtue; and this will be that of the best thing in us. Whether it be reason or something else that is this element which is thought to be our natural ruler and guide and to take thought of things noble and divine, whether it be itself also divine or only the most divine element in us, the activity of this in accordance with its proper virtue will be perfect happiness. That this activity is contemplative we have already said.⁴⁶

Of course, this doesn't mean that Aristotle is indifferent to our duties, our usual moral obligations, but that—as is also the case of Plato's philosopher kings—the most desirable activity is rational contemplation of the highest order of things. The philosopher kings know about the Forms and hence have the ability and obligation to run society, but power is never an end in itself. One relinquishes it as soon as one can. University administrators take note! Again, as with Plato, while the Greeks were not prudes or ascetics for the sake of prudishness or asceticism, for Aristotle, satisfying basic needs could never be the ultimate or primary aim of the good life. “Any chance person—even a slave—can enjoy the bodily pleasures no less than the best man; but no one assigns a

slave a share in happiness—unless he assigns to him also a share in human life.”⁴⁷

The Stoics

The legacy is twofold. On the one hand, we have philosophical understanding of the nature of explanation based on the way we understand the world. Thanks to the Greeks, most people saw that forward-looking explanation, in terms of purpose or of final cause, seems not just appropriate but necessary. On the other hand, we have theological inference from this understanding to the existence of a deity or deities. Not all accepted this inference, but some did, and obviously, it is going to be of great importance as we move forward into the Christian era. But before this new religion established itself on the scene, the inference was embellished and promoted. Above all, it was the centerpiece of the thinking of the Stoics, a school started by Zeno of Citium (third century BC) and much favored by Roman thinkers, notably, the emperor Marcus Aurelius (AD 121–180). Cicero’s *On the Nature of the Gods*, written in 45 BC, gives a good account of the Stoic position. There is a clear affirmation of the Designer at work, a wonderful anticipation of what we shall see in English thinking nearly two millennia later.

When we see something moved by machinery, like an orrery [mechanical model of the solar system] or clock or many other such things, we do not doubt that these contrivances are the work of reason; when therefore we behold the whole compass of the heaven moving with revolutions of marvelous velocity and executing with perfect regularity the annual change of the seasons with absolute safety and security for all things, how can we doubt that all this is effected not merely by reason, but by a reason that is transcendent and divine?⁴⁸

It is made clear that this applies not just to the world at large but particularly to the living world. “Why should I speak of the

amount of rational design displayed in animals to secure the perpetual preservation of their kind? To begin with some are male and some female, a device of nature to perpetuate the species. Then parts of their bodies are most skillfully contrived to serve the purposes of procreation and of conception, and both male and female possess marvelous desires for copulation.”⁴⁹ What is interesting is the explicit emphasis on ourselves. Of course, Plato and Aristotle were more interested in us humans than in other organisms, but the universe does not exist for us. We are part of the universe. In the *Laws*, Plato chides: “you perverse fellow . . . you forget that creation is not for your sake; rather you exist for the sake of the universe.”⁵⁰ It is true that, within the world, Aristotle seems to privilege us, but overall we are out of luck: “if the argument be that man is the best of the animals, this makes no difference; for there are other things much more divine in their nature even than man, e.g., most conspicuously the bodies of which the heavens are framed.”⁵¹ The Unmoved Mover doesn’t even know about us. For the Stoics, we are not perfect, but we are a very important part of the picture and there are implications that the designer had us humans in mind, in an exalted role. This is Aristotle pumped right up: “the corn and fruits produced by the earth were created for the sake of animals, and animals for the sake of man: for example the horse for riding, the ox for ploughing, the dog for hunting and keeping guard; man himself however came into existence for the purpose of contemplating and imitating the world; he is by no means perfect, but he is ‘a small fragment of that which is perfect.’”⁵²

Everything has purpose. Whether in Aristotle, certainly in the Stoics, we are special. And that, for good or ill, is surely an appropriate point from which to move on.