

BOOK I

The Science of First CausesSCIENCE AND CRAFT GROW FROM SENSE-
PERCEPTION, MEMORY, AND EXPERIENCE

I

980a21 All human beings by nature desire to know. A sign of this is our liking for the senses; for even apart from their usefulness we like them for themselves—especially the sense of sight, since we choose seeing above practically all the others, not only as an aid to action, but also when we have no intention of acting.

25 The reason is that sight, more than any of the other senses, gives us knowledge of things and clarifies many differences between them.

Animals possess sense-perception by nature at birth.

In some but not all of these, perception results in memory, making them more intelligent and better at learning than those that cannot remember. Some animals that cannot hear sounds (for instance, bees and similar kinds of animal) are intelligent but do not learn; those that both perceive sounds and have memory also learn.

Non-human animals live by appearances and memories but have little share in experience, whereas human beings also live by craft and reasoning. In human beings experience results from memory, since many memories of the same thing result in the capacity for a single experience. Experience seems to be quite like science and craft, and indeed human beings attain science and craft through experience; for, as

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Polus¹ correctly says, experience has produced craft, but inexperience only luck.

A craft arises when many thoughts that arise from experience result in one universal judgment about similar things. For the judgment that in this illness this treatment benefited Callias, Socrates, and others, in many particular cases, is characteristic of experience, but the judgment that it benefited everyone of a certain sort (marked out by a single kind) suffering from a certain disease (for instance, phlegmatic or bilious people when burning with fever) is characteristic of craft.

CRAFT IS SUPERIOR TO EXPERIENCE BECAUSE IT KNOWS CAUSES

For practical purposes, experience seems no worse than craft; indeed we even see that experienced people are actually more successful than those who have a rational account but lack experience. The reason is that experience is cognition of particulars, whereas craft is cognition of universals. Moreover, each action and event concerns a particular; in medical treatment, for instance, we do not heal man (except coincidentally) but Callias or Socrates or some other individual who is coincidentally a man. If, then, someone has a rational account but lacks experience, and recognizes the universal but not the particular falling under it, he will often give the wrong treatment, since treatment is applied to the particular.

Nonetheless, we attribute knowing and comprehending to craft more than to experience, and we judge that craftsmen are wiser than experienced people, on the assumption that in every case knowledge, rather than experience, implies wisdom. This is because craftsmen know the cause, but [merely] experi-

1. [Polus, who lived in the fifth century B.C., was a student of the sophist Gorgias, regarding whom see Plato's *Meno*, n.2.—S.M.C.]

enced people do not; for experienced people know the fact that something is so but not the reason why it is so, whereas craftsmen recognize the reason why, i.e. the cause.

KNOWLEDGE OF CAUSES IS CHARACTERISTIC OF WISDOM

That is why we believe that the master craftsmen in a given craft are more honorable, know more, and are wiser than the manual craftsmen, because they know the causes of what is produced. The manual craftsmen, we think, are like inanimate things that produce without knowing what they produce, in the way that, for instance, fire burns; the latter produce their products by a natural tendency, while the manual craftsmen produce theirs because of habit. We assume, then, that some craftsmen are wiser than others not because they are better in practice, but because they have a rational account and recognize the causes.

And in general, a sign that distinguishes those who know from those who do not is their ability to teach. Hence we think craft, rather than experience, is knowledge, since craftsmen can teach, while merely experienced people cannot.

Further, we do not think any of the senses is wisdom, even though they are the most authoritative ways of recognizing particulars. They do not tell us why anything is so; for instance, they do not tell us why fire is hot, but only that it is hot.

THEORETICAL WISDOM IS CHARACTERISTICALLY PURSUED FOR ITS OWN SAKE

It is not surprising, then, that in the earliest times anyone who discovered any craft that went beyond the perceptions common to all was admired not only because he discovered something useful, but also for being a wise person, superior to others. Later on, as more crafts were discovered—some related to necessities, others to [leisuretime] pursuits—those who discovered these latter crafts were in every case judged to be wiser than the others, because their sciences did not aim at practical utility. Hence, finally, after all these crafts had been established, the sciences that aim neither at pleasure nor at necessities were discovered, initially in the places where people had

leisure. This is why mathematical crafts arose first in Egypt; for there the priestly class were allowed to be at leisure.

The difference between craft and science and other similar sorts of things has been discussed in the Ethics. The point of our present discussion is to show that in everyone's judgment any discipline deserving the name of wisdom must describe the first causes, i.e. the principles. And so, as we said earlier, the experienced person seems to be wiser than those who have just any old perception; the craftsman seems to be wiser than those with nothing more than experience; the master craftsman wiser than the manual craftsman; and the purely theoretical sciences wiser than the productive sciences. It is clear, then, that wisdom is knowledge of certain sorts of principles and causes.

COMMON BELIEFS ABOUT WISDOM AND THE WISE PERSON

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Since this is the science we are looking for, we should consider what sorts of causes and principles wisdom is the science of. Perhaps this will become clearer if we consider our judgments about the wise person. First, we judge that he has knowledge about all things as far as possible, without, however, having it about each particular [kind of thing]. Next, the one who is capable of knowing difficult things, i.e. things not easily known by human beings, is the wise person; for sense-perception is common to everyone, and that is why it is easy and not characteristic of wisdom. Further, someone is wiser in a given science if he is more exact, and a better teacher of the causes. Again, if one of two sciences is choiceworthy for itself—[purely] for the sake of knowing it—and the other is choiceworthy [only] for the sake of its results, the first has a better claim to be wisdom than the second. Moreover, the superior science has a better claim than the subordinate science; for the wise person must give orders, not take them, and those who are less wise must follow his orders, not he theirs. These, then, are our judgments about wisdom and wise people.

THE SCIENCE OF THE HIGHEST PRINCIPLES
FITS THESE COMMON BELIEFS

Of these features, we judge that knowledge about everything necessarily belongs to the one who has the best claim to universal science; for he in a way knows everything that is a subject for a science. These most universal things are also just about the most difficult for human beings to know, since they are
25 furthest from perceptions. Further, the most exact sciences are those that, more than the others, study the first things; for the sciences that are derived from fewer principles—for instance, arithmetic—are more exact than those—for instance, geometry—that require further principles. Moreover, the science that studies the causes is more of a teacher, since teachers
30 are those who state something's causes. Besides, knowledge and science for their own sake are most characteristic of the science of the most appropriate object of knowledge. For one who chooses knowledge
982b for its own sake will choose above all the science that is a science to the highest degree. This science is the science of the most appropriate objects of knowledge; these objects are the first things, i.e. the causes, since we know the subordinate things because of these and from these, not the other way round. Further, the
5 most superior science—the one that is superior to any subordinate science—is the one that knows the end for which a given thing should be done; this end is something's good, and in general the end is what is best in every sort of nature.

From everything that has been said, then, we find that the name under discussion, [i.e., 'wisdom'], applies to the same science; for we find that wisdom
10 must study the first principles and causes, and the good, the end, is one of the causes.

WISDOM IS THE RESULT OF WONDER, NOT OF
NEED, AND IS PURSUED FOR ITS OWN SAKE,
NOT FOR SOME FURTHER USE

The fact that this science is not productive is also clearer from those who first engaged in philosophy. For human beings originally began philosophy, as they do now, because of wonder, at first because they wondered at the strange things in front of them, and later because, advancing little by little, they found
15 greater things puzzling—what happens to the moon, the sun and the stars, how the universe comes to be.

Someone who wonders and is puzzled thinks he is ignorant (this is why the myth-lover is also a philosopher in a way, since myth is composed of wonders);²⁰ since, then, they engaged in philosophy to escape ignorance, they were evidently pursuing scientific knowledge [simply] for the sake of knowing, not for any further use.

What actually happened is evidence for this view. For it was only when practically everything required for necessities and for ease and [leisure-time] pursuits was supplied that they began to seek this sort of understanding; clearly, then, we do not seek it for some
25 further use. Just as we describe a free person as one who exists for his own sake and not for someone else's, so we also describe this as the only free science, since it is the only one that exists for its own sake.

IT IS THEREFORE A PREEMINENTLY

DIVINE SCIENCE → Aqu. ST 1.1.5: 411
L8 411

Hence the possession of this science might justifiably be thought to be beyond human capacity. For in
30 many ways human nature is in slavery, so that, as Simonides says, 'the god alone would have this privilege,' and it is unfitting for human beings to transgress their own level in their search for the science.² If there actually is something in what the poets say, and the divine nature is spiteful, divine spite would be
983a likely in this case, and all those who go too far would suffer misfortunes. The divine nature, however, cannot be spiteful; as the proverb says, 'Poets tell many lies.'

Nor ought we to take any science to be more honorable than this one, since the most divine science is
5 also the most honorable, and this science that we are describing is the most divine. It alone is most divine in two ways: for the divine science [may be understood] as (i) the one that a god more than anyone else would be expected to have, or as (ii) the science of divine things. Only this science [of first causes] satisfies both conditions [for being divine]. For (i) the god seems to be among the causes of all things, and to be some sort of principle, and (ii) this is the sort of science that the god, alone or more than anyone
10 else, would be expected to have. Hence all the other

2. [Regarding Simonides, see Plato's *Republic*, Bk. I, n.9.]

inks he is a philoso-wonders); 20 to escape scientific

sciences are more necessary than this one, but none is better.

WISDOM BOTH ARISES FROM WONDER AND REMOVES WONDER

However, the possession of this science must in a way leave us in a condition contrary to the one we were in when we began our search. For, as we said, everyone begins from wonder that something is the way it is, as they wonder at toys that move spontaneously, or the turnings of the sun, or the incommensurability of the diagonal (for people who have not yet studied the cause are filled with wonder that there is something that is not measured by the smallest length). But we must end up in the contrary and (according to the proverb) the better state, the one that people achieve by learning [the cause] in these other cases as well—for nothing would be more amazing to a geometer than if the diagonal turned out to be commensurable.

We have described, then, the nature of the science we are seeking, and the goal that our search and our whole line of inquiry must reach.

Survey of Previous Philosophers: The Presocratics

THE FOUR CAUSES

It is evident, then, that we must acquire knowledge of the original causes, since we say we know a thing whenever we think we recognize its primary cause. Causes are spoken of in four ways. One of these, we say, is the being and essence; for the reason why is traced back ultimately to the account, and the primary reason why is the cause and principle. Another is the matter and subject. A third is the source of the principle of motion. The fourth is what something is for, i.e. the good—the opposite to the third cause, since it is the end of all coming to be and motion.

We have studied these causes adequately in our work on nature. Still, let us also enlist those who previously took up the investigation of beings and pursued philosophical study about the truth; for it is clear that they also mention causes and principles of some sort. A discussion of their views, then, will ad-

vance our present line of inquiry; for either we shall find some other kind of cause or we shall be more convinced about those we have just mentioned.

THE MATERIAL CAUSE

Most of the first philosophers, then, thought that the only principles of all things were material. For, they say, there is some [subject] that all beings come from, the first thing they come to be from and the last thing they perish into, the substance remaining throughout but changing in respect of its attributes. This, they say, is the element and the principle of beings. And for this reason they think that nothing either comes to be or is destroyed, on the assumption that this nature [that is the subject] persists in every change, just as we say that Socrates does not come to be without qualification when he comes to be good or musical, and that he is not destroyed when he loses these states (because the subject, Socrates himself, remains)—so also they say that nothing else either comes to be or perishes without qualification (for there must be some nature, either one or more than one, that persists while everything else comes to be from it).

But they do not all agree about the number or type of this material principle. Thales, the originator of this sort of philosophy, says it is water (that is why he also declared that the earth rests on water). Presumably he reached this judgment from seeing that what nourishes all things is wet and that the hot itself comes from the wet and is kept alive by it (and what all things come to be from is there principle). He also reached this judgment because he thought that the seeds of all things have a wet nature (and water is the principle of the nature of wet things).

Some people think that even those who first gave accounts of the gods in very ancient times, long before the present, accepted this judgment about nature. For the ancients made Oceanus and Tethys the parents of coming to be and described the oath of the gods as water, which they called Styx; for what is oldest is most honored, and what is most honored is the oath. It is perhaps unclear whether this belief about nature

3. [Thales of Miletus (c. 636–c. 546 B.C.), the earliest Pre-Socratic philosopher, maintained that everything in nature is composed of water.]

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is in fact old or even ancient, but at any rate this is what Thales is said to have declared about the first cause. (No one would think of including Hippon⁴ among these philosophers, given the triviality of his 5 thought.)

Anaximenes⁵ and Diogenes⁶ take air to be both prior to water and also the primary principle of all the simple bodies, while Hippasus of Metapontium⁷ and Heraclitus of Ephesus⁸ say this about fire. Empedocles⁹ takes the four bodies to be principles, adding earth as a fourth to the ones mentioned. These, he 10 says, always remain and do not come to be, except in so far as they come to be more or fewer, being combined into one and dispersed from one into many.

Anaxagoras of Clazomenae,¹⁰ who was older than Empedocles but wrote later, says that the principles are unlimited; for he says that practically all the uniform things (for instance, water or fire) come to be and 15 are destroyed only in the ways we have mentioned, by being combined and dispersed; they do not come to be or get destroyed in any other way, but always remain.

THE MOVING CAUSE

If one went by these views, one might judge that the material cause is the only sort of cause. But as people thus advanced, reality itself showed them the way and 20 compelled them to search. For however true it might be that all coming to be and perishing is from one

4. [Hippon was a philosopher of nature who lived during the fifth century B.C.]

5. [Anaximenes was a sixth-century B.C. Pre-Socratic philosopher who maintained that air was the basic element of nature.]

6. [Diogenes was a fifth-century B.C. philosopher who received the teaching of Anaximenes.]

7. [Hippasus was an early Pythagorean, one of the followers of Pythagoras, the sixth-century B.C. philosopher who founded a religious order that believed in reincarnation and considered numbers the essence of the world.]

8. Heraclitus (c. 535–c. 475 B.C.) was an influential Pre-Socratic philosopher who viewed the world-order as a continuous flux and considered any claim to permanence an illusion of the human senses.]

9. [Regarding Empedocles, see Plato's *Meno*, n.6.]

10. [Regarding Anaxagoras, see Plato's *Phaedo*, n.12.]

(or more than one) thing, still, why does this happen, and what is the cause? For certainly the subject does not produce change in itself. I mean, for instance, neither the wood nor the bronze causes itself to change, nor does the wood itself produce a bed, or the bronze a statue, but something else causes the 25 change. And to search for this is (in our view) to search for the second principle—the source of the principle of motion.

Those who were the very first to undertake this line of inquiry into nature, who said that the subject is one, were quite satisfied with this. But at least some of those who said that the subject is one, as though 30 defeated by this search [for an explanation of change], said that the one, i.e. nature as a whole, is immobile, not only as regards coming to be and perishing (that was an old belief agreed on by all), but also as regards every other sort of change. This view is distinctive of them. 984b

Of those who said that the universe is one element, none managed to notice this [second] cause, unless Parmenides¹¹ did; he noticed it only in so far as he 35 posited not only one cause, but also in a way two causes. Indeed those who recognize more than one element—for instance, hot and cold, or fire and earth—make it easier to state [the cause that initiates motion], since they regard fire as having a nature that initiates motion, and water, earth, and other such things as having natures contrary to this.

After these sorts of principles were proposed by these people, other people found them inadequate to generate the nature of beings; once again, as we said, it was as though the truth itself compelled them, and so they began to search for the next sort of princi- 40 ple. For presumably it is unlikely that fire or earth or anything else of that sort would cause some things to be in a good and fine state and would cause other things to come to be in that state, and unlikely that people would think so; still, it was unsatisfactory to entrust so great a result to chance and luck. And so 45 when one of them said that mind is present (in nature just as in animals) as the cause of the world order

11. [Parmenides, who lived in the late sixth century B.C. and at least half of the fifth century, was an influential Pre-Socratic philosopher who viewed the world-order as composed of being itself and considered any claim to change an illusion of the human senses.]

and of all its arrangement, he seemed like a sober person, and his predecessors seemed like babblers in comparison. We know that Anaxagoras evidently made a start on giving such accounts, but an earlier statement of them is ascribed to Hermotimus of Clazomenae.¹² Those who held this view posited a principle of beings that is at once both the cause of things turning out well and the sort of cause that is the source of motion for beings.

EARLY GLIMPSES OF THE MOVING CAUSE

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One might suspect that the first to search for this sort of cause was Hesiod¹³ and anyone else who counted desire or appetite among beings as a principle, as Parmenides, for instance, also did. For he too, in describing the coming to be of the whole universe, says: 'Desire was the first of all the gods she devised.' And Hesiod says: 'Before everything else that came to be, there was chaos, and then the broad-fronted earth, and desire, preeminent among all the immortals.' He assumes that there must be some cause among beings to initiate motion in things and to bring them together. Let us leave it till later to determine which of these people was the first [to discover this sort of cause].

Moreover, the contraries of good things (i.e. disorder and ugliness no less than order and beauty) were also apparent in nature, and bad things were apparently more numerous than good things, and base things more numerous than beautiful things. For this reason someone else introduced love and strife so that each of them would be the cause of one of these two sorts of things. For if we follow Empedocles' argument, and do not confine ourselves to his mumbly way of expressing it, but attend to what he has in mind, we will find that love is the cause of good things, and strife of bad. And so, if one were to claim that in a way Empedocles said — indeed was the first to say — that the good and the bad are principles, one would perhaps be right, if the cause of all goods is the good itself.

12. [No other information is known about Hermotimus.]

13. [Hesiod was an eighth-century B.C. Greek poet whose works are a rich source of mythology.]

These people, then, as we say, evidently made this much progress in fastening on two of the four causes that we distinguished in our work on nature — the matter and the principle of motion. But they did so dimly and not at all perspicuously. They were like unskilled boxers in fights, who, in the course of moving around, often land good punches, but are not guided by knowledge; in the same way these thinkers would seem not to know what they are saying, since they evidently make practically no use of these causes, except to a slight degree.

Anaxagoras, for instance, uses mind as an ad hoc device for the production of the universe; it is when he is puzzled about the cause of something's being necessarily as it is that he drags in mind, but in other cases he recognizes anything but mind as the cause of things that come to be. Empedocles, admittedly, uses these causes more than Anaxagoras does, but he too still makes insufficient use of them, and he does not succeed in using them consistently. At any rate, he often makes love draw things apart, and strife draw them together. For whenever strife scatters the universe into its elements, all the fire is gathered into one, and so is each of the other elements; and whenever love brings things back together again into one, the parts from each element are necessarily scattered again.

Empedocles, then, went beyond his predecessors. He was the first to distinguish this cause and to introduce it; he did not take the principle of motion to be one, but assumed different and contrary principles. Moreover, he was the first to say that there are four material elements. In fact, though, he does not use all four, but treats them as two, treating fire in its own right as one nature, and its opposites — earth, air, and water — as together constituting another; this may be gathered from studying his poems. As we say, then, this is how many principles he recognized, and this is what he said about them.

Leucippus¹⁴ and his colleague Democritus,¹⁵ on the other hand, say that the elements are the full and the empty, and that, of these, the full and solid is what is, and the empty is what is not. That is why they also say that what is no more of a being than

14. [Leucippus was a fifth-century B.C. philosopher who developed the theory that the world is composed of solid, invisible atoms.]

15. [Regarding Democritus, see Aristotle's *Physics*, n.3.]

what is not, because body is no more of a being than
10 the empty is. They take these to be the material causes
of beings.

Those who take the substance that is the subject
to be one explain how everything else comes to be by
referring to the ways in which the subject is affected,
taking the rare and the dense to be the principle of
the ways it is affected. In the same way, Leucippus
and Democritus take the differentiae to be the causes
of the other things. They say, however, that there are
three of these differentiae—shape, order, and posi-
15 tion. For they say that what is is differentiated only
by rhythm, touching, and turning. Of these rhythm
is shape, touching is order, and turning is position;
20 for A differs from N in shape. AN from NA in order,
and Z from N in position. Like the other people,
however, they were too lazy to take up the question
about motion and to ask from what source and in
what way it arises in beings.

This, then, would seem to be the extent, as we say,
of the earlier thinkers' search for these two causes.

(...) *ch. 5: Pythag.*

Criticisms of Plato

ORIGINS OF THE THEORY OF IDEAS

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987^a29 Plato's work came after the philosophical views we
have mentioned; it agreed with them in most ways,
30 but it also had distinctive features setting it apart from
the philosophy of the Italians. For in his youth Plato
first became familiar with Cratylus¹⁶ and with the
Heraclitean beliefs that all perceptible things are al-
ways flowing and that there is no knowledge of them;
987^b he held these views later too. Socrates, on the other
hand, was concerned with ethics and not at all with
nature as a whole; he was seeking the universal in
ethics and was the first to turn his thought to defini-
5 tions. Plato agreed with Socrates, but because of his
Heraclitean views he took these definitions to apply
not to perceptible things but to other things; for, he
thought, the common formula could not be of any of

16. [Cratylus, a young contemporary of Socrates, carried
the teachings of Heraclitus to their extreme, maintaining
that not only can you not step twice in the same river; you
cannot step in the same river even once, since the river is
changing as you step.]

the perceptible things, since they are always changing.
Beings of this sort [that definitions are of], then, he
called Ideas, and he said that perceptible things are
apart from these, and are all called after them, since
the things with the same names as the Forms are
what they are by participation in them. 10

In speaking of 'participation' he changed only the
name; for the Pythagoreans¹⁷ say that things are what
they are by imitating numbers, and Plato (changing
the name) said they are what they are by participating
[in Forms]. But they left it to others to investigate
what it is to participate in or to imitate Forms.

IDEAS, MATHEMATICAL OBJECTS, AND NUMBERS

Further, he says that, apart from perceptible things 15
and Forms, there are also mathematical objects in
between. These differ from perceptible things in be-
ing everlasting and immobile; they differ from Forms
in that there are many of the same kind, whereas
there is only one Form for each kind of thing.

Since the Forms are the causes of other things, he
thought that their elements are the elements of all
beings. The great and the small, then, as matter, and
the one, as substance, are principles; for Forms come 20
from these, by participating in the one. And yet he
said, agreeing with the Pythagoreans, that the one is
substance, and that it is not said to be one by being
something else. He also agreed with them in saying 25
that numbers are the causes of the being of other
things; but in positing a duality instead of treating
the indeterminate as one, and in taking the great
and small to constitute the indeterminate, he held a
distinctive view of his own. Moreover, in his view
numbers exist apart from perceptible things; whereas
the Pythagoreans take the objects themselves to be
numbers, and do not place mathematical objects be-
tween perceptible things and Forms.

His claim that the one and numbers exist apart 30
from the other objects (in contrast to the Pythagorean
view) and his introduction of the Forms were the
result of his investigation of arguments; for none of
his predecessors engaged in dialectic. He made the
other nature [besides the One] a duality because he
thought that numbers (except the primes) could be

17. [Regarding the Pythagoreans, see n.7.]

988a neatly produced from the duality, as though from something malleable.

What actually happens, though, is the contrary of this, and it is implausible to think it would happen in the way they [the Platonists] say. For in their view many things are made out of the matter, but the Form generates only once; in fact, however, only one table is apparently made out of one [bit of] matter, whereas the agent who applies the form, though he is one, makes many tables. Similarly, in the case of male and female, the female is impregnated from one copulation, whereas the male impregnates many females. And yet these things are imitations of those principles [that they believe in].

PLATO CONSIDERED ONLY TWO OF THE FOUR CAUSES

This, then, was what Plato determined about the questions we are investigating. It is evident from what has been said that he used only two causes, the cause involving the what-it-is and the material cause; for the Forms are causes of the what-it-is of the other things, and the one is the cause of the what-it-is of Forms. The nature of the matter that is the subject for the Forms (in the case of perceptible things) and for the one (in the case of Forms) is also evident: it is the duality, the great and the small. Further, he has assigned the cause of good and bad to the elements, one to each, as we say some earlier philosophers, such as Empedocles and Anaxagoras, also sought to do.

THE IDEAS SIMPLY MULTIPLY THE NUMBER OF THINGS TO BE EXPLAINED

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990a34 . . . As for those who posited Ideas, the first objection is that in seeking to grasp the causes of the beings in this world, they introduced different things, equal in number to them. It is as though someone wanted to count things and thought he could not do it if there were fewer of them, but could do it if he added more. For the Forms they resorted to in their search for the causes of things in this world are practically equal in number to—or at any rate are no fewer than—the things in this world. For take each [kind of] thing that has a one over many, both substances and non-

substances, both things in this world and everlasting things; in each case there is some [one over many] that has the same name [as the many].

THE ARGUMENTS FOR FORMS FAIL

Further, none of the proofs we offer to show that there are Forms appears to succeed; for some of them are invalid, while some also yield Forms of things that we think have no Forms. For the arguments from the sciences yield Forms of all the things of which there are sciences; the one over many yields Forms even of negations; and the argument from thinking about something that has perished yields Forms of things that perish, since there is an appearance of these. Further, among the more accurate arguments, some produce Ideas of relatives, whereas we deny that these are a kind of things that are in their own right; others introduce the Third Man.

THE THEORY OF FORMS CONFLICTS WITH OTHER PLATONIST DOCTRINES

And in general the arguments for Forms undermine the existence of things that matter more to us than the existence of the Ideas does. For they imply that number, not duality, is first and that what is relative is prior to what is in its own right, and they lead to all the other [unacceptable] conclusions that some people have been led to believe by following the beliefs about the Ideas, even though these beliefs conflict with their own principles.

Further, the reasoning that leads us to say that there are Ideas also yields Forms of many other things as well as of substances. For a thought is one not only in the case of substances but also in other cases; there are sciences of other things as well as of substance; and thousands of other such difficulties arise.

On the other hand, it is necessary, and follows from the beliefs about Forms, that if things can participate in Forms, only substances can have Ideas; for a thing does not participate in a Form coincidentally, but insofar as it is not said of a subject. (If, for instance, something participates in the Double itself, it also participates in the Everlasting, but coincidentally, since it is coincidental that the Double is everlasting.) Hence the Forms will be substances. But the same things signify substances among the Forms as in this world—otherwise what will the claim that there is

(...) chs. 7-8 recap

something apart from these things, the one over many, amount to? And if the Idea and the things participating in it have the same form, they will have something in common—for why should [what it is to be] two be one and the same thing in all the perishable twos and in all of the many everlasting twos, but not one and the same thing in the Two itself and in some particular two? But if they do not have the same form, they will be [merely] homonymous; it will be like calling both Callias and a wooden [statue] a man, when one has observed no common [nature] that they share.

THE IDEAS CANNOT EXPLAIN PERCEPTIBLE THINGS

One might be especially puzzled about what on earth Forms contribute to perceptible things, either to those that are everlasting or to those that come to be and 10 perish; for they cause neither motion nor any change in them. Nor do they contribute to knowledge of other things, since they are not their substance—if they were, they would be in the other things. Nor do 15 they contribute to the being of other things, since Forms are not present in the things that participate in them. For if they were present, they might perhaps be thought to be causes, as white is if it is mixed in a white object. This argument was first stated by Anaxagoras and then by Eudoxus and certain others. It is easily upset, since it is easy to collect many 20 impossible consequences that challenge such a belief.

Nor can the other things be from Forms in any of the ways things are normally said to be from something. And to say that Forms are patterns and that other things participate in them is empty talk, mere poetic metaphors. For what is it that looks to the Ideas when it produces things? And it is possible for one 25 thing to be, or to come to be, like another without being copied from it, so that whether or not Socrates exists someone like Socrates might come to be; and clearly the same would be true even if Socrates were everlasting. Further, there will be many patterns of the same thing, hence many Forms; the Forms of man, for instance, will be Animal and Biped as well 30 as Man-itself. Further, the Forms will be patterns not only of perceptible things, but also of themselves—the genus, for instance, of its species—so that the 991b same thing will be both pattern and copy.

Further, it would seem impossible for a substance

to be separate from what it is the substance of. How, then, if the Ideas are the substances of things, could they be separate from them?

According to the *Phaedo*, the Forms are the causes both of being and of coming to be. But what participates in the Forms does not come to be, even if the Forms exist, unless something initiates the motion. And in addition to these [natural things], many things—for instance, a house or a ring—which in our view have no Forms, come to be. Hence it is clearly also possible for the [natural] things to be and to come to be because of causes of the sort just mentioned.

Further, if the Forms are numbers, how can they 10 be causes? Is it because beings are other numbers, so that one number, for instance, is man, another is Socrates, and another is Callias? If so, why are one lot of numbers causes of the other lot? It makes no difference if the Forms are everlasting and the other things are not. But if it is because things in this world—for instance, a harmony—are ratios of numbers, it is clear that the things of which they are ratios are some one [kind of] thing. But if there is this one thing, i.e. 15 the matter, then evidently the numbers themselves will also be ratios of one thing to another. If, for instance, Callias is a numerical ratio of fire, earth, water, and air, then his Idea will also be the number of certain other subjects. And Man-itself, even if it is in some way numerical, will nonetheless be a numerical ratio of certain things, not [properly] a number. This argument, 20 then, does not show that any Idea is a number.

THE PLATONISTS HAVE THE WRONG CONCEPTION OF A UNIVERSAL SCIENCE

... In general, it is impossible to find the elements 992b of beings without distinguishing the ways they are spoken of, since in fact beings are spoken of in many ways. It is especially impossible to find them if we 20 search in this way for the sorts of elements that compose beings. For what elements compose acting or being affected or the straight? Presumably these cannot be found; at most the elements of substances can be found. Hence it is incorrect either to seek the elements of all beings or to think one has found them.

And how could one even learn the elements of all things? For clearly one cannot begin with previous 25 cognition. If, for instance, we are learning geometry,

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7 can they 10 numbers, another is 7 are one takes no he other world— ers, it is e some ng, i.e. es will 15 tance, rd air, other y nu- fcer- ment, 20

we may have previous knowledge of other things [outside geometry], but we have no previous cognition about the subject matter of the science we are to learn about; the same is true in other cases. Hence if there is some science of all things, such as some 30 say there is, we could not have previous cognition of anything before we learn this science. And yet all learning, either through demonstration or through definitions, relies on previous cognition of either all or some things; for one must previously know the elements of the definition, and they must be well known; the same is true for learning through induction. Then is this science actually innate? If so, it is remarkable that we manage not to notice that we possess the supreme science.

Further, how is one to acquire recognition of the elements, and how is this knowledge to be made clear? For there is a puzzle here too, since our answers might be disputed, as in the case of certain syllables; 5 for some say that ZA is from S, D, and A, while others say it is a different sound, and none of the well-known ones.

Further, how could one recognize perceptible things without perception? And yet one would have to, if the elements composing all things are indeed the same, as complex sounds are [composed of] their 10 proper elements.

(...) ch. 10 conclusion

BOOK VII

The Study of Substance

SUBSTANCE IS THE PRIMARY TYPE OF BEING

1

1028a10 Being is spoken of in many ways, which we distinguished previously in the work on how many ways things are spoken of. For one [type of being] signifies what-it-is and a this; another signifies quality, or quantity, or any of the other things predicated in this way. But while being is spoken of in this many ways, it is evident that among these the primary being is the 15 what-it-is, which signifies substance. For whenever we say what quality this has, we call it good or bad, not six feet long or a man, whereas whenever we say what it is, we call it a man or a god, not pale or hot or six feet long; and the other things are called beings by belonging to this type of being—some as quanti-

ties, some as qualities, some as affections, some in some other such way. 20

That is why someone might actually be puzzled about whether walking, flourishing, or sitting signifies a being, for none of these is in its own right nor is any of them capable of being separated from substance, but it is more true that the walking or sitting or flourishing thing is a being (if indeed it is a being). 25 This latter type of thing is apparently more of a being because it has some definite subject—the substance and the particular—which is discerned in such a predication; for this subject is implied in speaking of the good or sitting thing. Clearly, then, it is because of substance that each of those other things is also a 30 being, so that what is in the primary way—what is not something, but is without qualification a being—is substance.

HOW SUBSTANCE IS PRIMARY

Now the primary is so spoken of in many ways, but still, substance is primary in every way: in nature, in account, and in knowledge. For none of the other things predicated is separable, but only substance. Substance is also primary in account, since its account is necessarily present in the account of each thing. 35 Moreover, we think we know a thing most of all whenever we know what, for instance, man or fire is, rather than when we know its quality or quantity or 1028b place; for indeed we know each of these only when we know what the quantity or the quality is.

THE OLD PUZZLE ABOUT BEING IS REALLY ABOUT SUBSTANCE

Indeed, the old question—always pursued from long ago till now, and always raising puzzles—‘What is being?’ is just the question ‘What is substance?’. For 5 it is substance that some say is one and others say is more than one, some saying that it is limited in number, others that it is unlimited. And so we too must make it our main, our primary, indeed (we may say) our only, task to study what it is that is in this way.

CANDIDATES FOR SUBSTANCE

2

The most evident examples of substances seem to be 10 bodies. That is why we say that animals and plants and their parts are substances, and also natural bodies,

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