



An Address to Participants in the Institute for the Study of Nature
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[This text has been edited, and is intended to help the reader understand
Aristotle's *Physics*, Book 1, chapter 7.]

DEFINITIONS OF SUBSTANCE, MATTER, FORM.

1 We have to begin with some preliminary definitions from Aristotle. What
Aristotle called “form in the sense of substance,” which is often just called
“substantial form” in English, obviously cannot be understood without
understanding first what Aristotle meant by “substance” and by “form.” Nor
5 can “form” be understood without its correlative, “matter.”

SUBSTANCE

10 So let's start with “substance.” “Substance” for us usually means a non-living,
and more or less homogeneous body—the chemical elements and compounds,
for example, are “substances,” and perhaps various alloys and mixtures, too, like
stainless steel or brine. And usually we employ the word “substance” to name
dense and obvious bodies, not “insubstantial” things like air.

But this is not what Aristotle means at all.

15 Aristotle's meaning of “substance” applies even to things which are not
bodies—like the “separated substances,”¹ which are separate from all matter and
all sensible things and have no size or shape.

20 And even when Aristotle speaks of bodily substances, his examples may
come as some surprise. When explaining what he means by “substance,” which
is the first of his ten categories of beings, his examples are always such things as
“an individual man” or “an individual horse,”² or else “this individual tree.”³ A
man, then, is a perfectly decent example of a substance.

¹ See *Metaphysics* 12.7 1073a1-12.

² *Categories* Ch.5 2a13.

1 Also, even when speaking of a bodily substance, Aristotle distinguishes
between its substance on the one hand and its extension⁴ or continuous
quantity on the other. Hence “body,” insofar as this means the three-
dimensional extension or volume of a thing, is a species of quantity, for
5 Aristotle, not a species of substance.⁵

So what does Aristotle mean by a substance? He means something
which does not exist in a subject. What inheres in a subject cannot exist
without it, although it is not a part of it but a property or attribute inhering in
it, like the shape of a piece of clay. Such things which befall other things as
10 their attributes are called (in philosopher’s jargon) “accidents.” Among
accidents, some are caused in a subject by something outside, like the shape of
the clay comes from the artist, not the clay, while others are caused from the
nature of the subject itself, like the shape of a giraffe comes from the giraffe—
and such an accident is called a “proper accident,” or else a “property” of the
subject. Sometimes an accident exists in one subject, but then that subject itself
15 is an accident of a still more basic subject; for example, color resides in a
surface, but the surface in turn inheres in or belongs to a body. By a
“substance” Aristotle means what does not exist in a subject at all, but simply
exists all by itself, and is not some attribute inhering in something else.⁶

Everything besides individual substances (like horses or men) is either
20 said of individual substances (like “horse” and “man” are said of individuals), or
they exist in individual substances as accidents of them (like “this color” and
“this quantity” and “this movement” belong to individual horses and men), or
they are both said of and accidents of individual substances (like “white” and
“short” and “moving” are said of and exist in individual men or dogs or stones
and the like).⁷

25 Individual substances therefore underlie and are subjects of everything
else we can name.⁸ They are the “real beings” in the world, which exist, have
properties, act, move, change, and cause things to happen, and come into and

³ *Categories* Ch.5 2b13.

⁴ A sign that the very substance of you is not the same as the size of you is that you have changed size over time.

⁵ *Categories* Ch.6 4b25. Aristotle lists “soma,” or “body,” as a species of quantity. See also *De Anima* 1.5 410a20: “But it is impossible for there to be a substance, and not a quantity, made from the elements of a quantity.”

⁶ *Categories* Ch.5 2a11.

⁷ Aristotle says this at *Categories* Ch.5 2a33: “But all other things either are said of the underlying primary substances or are in these underlying things.”

⁸ *Categories* Ch.5 2a36-7.

1 go out of existence. Everything else we talk or think about is either attributed
to them or inheres in them or both.

5 Now a further point: every individual substance, according to Aristotle,
is a natural thing. He will often speak as though an artifact, such as a house,
may be thought of as a substance, but when he needs to get more exact he
denies this. After mentioning a “house” and a “vase” as examples of substance,
he corrects himself and says “neither these things themselves, nor any of the
10 other things which are not formed by nature, are substances at all; for one may
lay it down that the nature in natural objects is the only substance to be found
in destructible things.”⁹ The reason he says this is that artifacts are formed by
adding certain accidents to natural substances, as a “gold statue” is really still
just gold with some shape in it, and a “house” is really just wood and iron
brought together in some order. So everything which is an individual substance
is also, as such, a natural thing. Conversely, Aristotle says that whatever has a
nature is a substance.¹⁰

15 One last point about what Aristotle means by “substance.” Since
“substance” is a distinct thing from all the various quantities, qualities,
positions, and movements which are seen to belong to things, and since
substance is just what underlies all these, therefore “substance” itself does not
offer anything to our senses or imagination. What we see or imagine as such is
20 always a quantity, or quality, or some such thing *inhering in* a substance, but
not the underlying substance itself in which these things exist or to which they
belong. So Aristotle says that an individual man, for example, although he is
plainly an individual substance, is not sensible as such.¹¹ We can see his color
and shape and movement, but we cannot see him except by reason of seeing the
things belonging to him. Hence if you try to form an image of what a
25 substance is in itself, you will always be forming a false image. We cannot sense
or imagine substance as such—we can only sense or imagine it as the subject of
other things which we can sense or imagine as such. Nevertheless, we can
understand it as such; hence the marvelous correspondence in English between
the words “substance” and “understand.”

⁹ *Metaphysics* 8.3 1043b20-23.

¹⁰ *Physics* 2.1 192b34.

¹¹ *De Anima* 2.6 418a20-25.

1 MATTER

Next let's take up "matter." Among today's scientists, "matter" means what has mass and takes up space. That's not Aristotle's definition at all. What Aristotle means by "matter" is much closer to what we mean by "raw materials." It means what something is made out of and which is in that thing.¹² His very word for "matter" is *hylé*, which originally meant "wood," then "timber," then "lumber." From there, the word came to mean any kind of materials out of which something was made. Hence the "matter" of a bronze statue is bronze, and that of a house, the boards and nails out of which it was built. Hence "matter" always names something in relation to a more complete thing which it can become, which it is in potency to being—and this happens by adding some special formation to it, some form by which its potency to be some definite thing is fulfilled or actualized. For a statue, this form is a shape; for a house, what forms its materials into an actual house is some order or arrangement of them.

And the materials of all artifacts are natural substances of one kind or another. But there is matter not only for artifacts, but also for natural substances themselves. Hence muscles and bones are matter in relation to certain animals. And still more rudimentary things are matter in relation to muscles and bones. Now this process of descending into more and more rudimentary materials cannot go on forever. As you mentally strip away artificial forms, and even natural forms and properties, eventually you must get down to something which is no actual natural thing at all considered in itself, but is purely in potency to every actual form, whether natural or artificial. Sometimes this is what Aristotle means by "matter"; not some specific matter relative to some specific object, like lumber for a house, but what is purely and simply matter, what is matter only, and in no way formed in itself, but is pure potency. Accordingly he says:

I call "matter" that which by itself is neither a what, nor a quantity, nor anything else among the things we say by which being is determined.¹³

¹² *Physics* 2.3 194b24.

¹³ *Metaphysics* 7.3 1029a19-21. See also 8.1 1042a26.

1 The Presocratic philosophers were the first to try to identify the basic matter
underlying all things. Thales said it was water. Anaximenes said it was air.
Anaximander called it “the unlimited” or “the indefinite,” refusing to specify it
further. While they do not agree about the specifics, there is something
5 common to their guesses: These thinkers saw that the first matter underlying
all things does not, considered in itself, actually have the forms and qualities of
any of the things whose matter it is—otherwise, whatever it could become
would have to have those forms and qualities, too. For instance, if you said that
everything is made of ice, then since ice as such is cold, everything ought to be
10 cold as ice, whereas that is not the case. So Thales guessed “water” rather than
“ice,” since water is able to be cold or hot, and in itself is not actually either of
these. And water has no shape of its own, and so it is open to all shapes. Still,
water does have some definite qualities of its own—it is wet, for example,
whereas sand is not. So Anaximenes improved on Thales’s guess by choosing
something even more non-descript: Air. But even “air” means something of a
15 certain rarity, as opposed, say, to water or stone. Hence Anaximander said the
first matter underlying all things is “indefinite,” without giving it the name of
any of the bodies familiar to us. Still, he was probably thinking of it as being
some actual substance, just one that was in its own nature free of various
contrary qualities, and open to receiving all of them.

20 Aristotle outdid them all. He said that the first matter underlying all
things not only has no actual qualities, considered in itself, but it is not even an
actual substance, it is not any actual “what,” considered in itself. That’s because
he thought an individual horse or dog or man is truly a substance, and that
each of these is not just some qualification of a pre-existing substance like water.
Accordingly, the matter which is in potency to being a horse or dog or man
25 must not, considered in itself, be any actual substance at all, and hence must
not be any actual quality, either. It is pure potency in the genus of substance,
although it never exists except under the form of some particular substance.
This is what Aristotle refers to as “prime matter.”¹⁴

30 Now because this fundamental matter, considered in itself, has no actual
nature or quality at all, and is nothing but a potency to be various substances, it
is not intelligible in itself. Just as it is an actual being only through the addition
of some form, by which it becomes actually this substance as opposed to that,

¹⁴ See, for example, *Metaphysics* 9.7 1049a25, where Aristotle mentions *proté hulé*. See also *Metaphysics* 8.4 1044a23, and *Generation and Corruption* 2.1 329a24 and 329a31. Aristotle thought there was more than one first or ultimate matter in the world—perhaps only one for all sublunar bodies, but another one altogether for each of the celestial bodies.

1 so too it is intelligible only by its relationship to forms. Hence Aristotle says
that “matter is unknowable by itself.”¹⁵ Instead, he says, “the underlying nature
is understandable by an analogy [to other things]. For as bronze is to statue, or
as wood is to bed, or as matter and the formless before it takes on form is to
5 whatever else has form, so is this [underlying nature] to a substance and an
individual thing and a being.”¹⁶

FORM

10 So much for matter. Form, correlatively, is the fulfillment of matter’s potency,
that by which any matter is some definite actual thing.

The forms by which certain substances take on a new accidental ways of
being, but remain the substances that they were, are accidental forms, forms in
one or more of Aristotle’s nine categories of accidents. For example, if I give a
15 new shape to a piece of stone, there is no new substance—there is still just
stone—but the new shape has formed the stone into a statue. But since that is
only a new shape, and not a new substance, the form is an accidental form.

The form by which prime matter takes on a new substantial being,
however, is a “substantial form,” or what Aristotle calls “form in the sense of
20 substance.” For example, if a man is indeed an individual substance, then when
matter becomes a man by the addition of some human form, this human form
is not a quantity, or a quality, or shape or position or arrangement or motion, or
any other accident or combination of them. Rather, it is something in the
genus of substance, and hence it is prior to all these accidents, and is a cause of
25 them, and in itself is something unimaginable, just like the resulting substance
itself, the man, is not something imaginable as such.

¹⁵ *Metaphysics* 7.10 1036a9.

¹⁶ See *Physics* 1.7 191a9-11.