

Potentiality and the Matter of Composite Substance

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ABSTRACT

The paper examines the connection between Aristotle's theory of generated substance and his notion of potentiality in *Metaphysics* $\Theta.7$. Aristotle insists that the matter of a substance is not what that substance is, against a competing view that was widely held both in his day and now. He coined the term *thaten* (ἐκείνινον) in order to make this point. The term highlights a systematic correspondence between the metaphysics of matter and of quality: the relationship between a thing and its matter is like the relationship between a qualified thing and the relevant quality. It is argued that Aristotle's view about the matter of particular substances is connected with his view about ultimate matter. His conception of the matter of particular substances allows him to block an argument, from Plato's *Timaeus*, that ultimate matter must be something imperceptible and lacking all perceptible qualities. Aristotle uses the term *thaten* to introduce an alternative conception of ultimate matter on which ultimate matter might well be an ordinary perceptible kind of thing.

Introduction

Aristotle, like most of us, thought that there are composite things. But he also thought something more. He thought that there are not only things but *substances* (οὐσίαι) with parts, for instance, living things. This is sometimes thought to be ordinary common sense, but in fact it is a daring view. For substances are ontologically basic, and thus Aristotle believes not only that there are things with parts, but that there are ontologically basic things with parts. But it is hard to see how that is possible, since something that has parts would seem to depend on its parts, and thus not to be ontologically basic.

This doctrine seems to me to be of enduring interest, and, of course, it raises many thorny questions (including the question of what precisely the doctrine amounts to). Among other things, we would like to know whether we can still agree with Aristotle. Is Aristotle's view incompatible with, for instance, scientific discoveries about the small structure of matter?

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I think that Aristotle's view remains as persuasive, and counter-intuitive, as it was in his lifetime. Arguing for this conclusion is a task too large for this essay. I will pursue a part of that task, by considering in detail a brief text from Aristotle's *Metaphysics*: the second part of $\Theta.7$. The passage in question is a complicated one, and it is unclear what its upshot is supposed to be. I will argue that it makes an important contribution to the solution of an important problem: the problem of how there can be composite substances at all. In particular, the passage articulates a crucial aspect of Aristotle's conception of matter, which I will call the *adjectival* conception of matter. On this conception, substances are not the matter they are made of, but merely derive their material character from it.

In advancing this doctrine in $\Theta.7$, Aristotle rejects a rival conception of matter. By recognizing that this view lies in the background, we can discern the coherence of some apparently unrelated things that Aristotle says. He does not make the rival view of matter explicit, but that is not surprising, because it was very widespread in his milieu. It is found in some pre-Socratic thinkers and in Plato's *Timaeus*, as well as being widespread today. On the rival view, things are the matter of which they are made up. This conception of matter is one basis for saying things like, 'a diamond is carbon,' or 'everything in the world is really a seething mass of quarks,' or 'all is water,' or 'water is H_2O .' I will call this the *substantival* view of matter (by contrast with Aristotle's adjectival view). On this view, the substance of a thing is what it is made out of. Aristotle rejects the substantival view, and advocates the adjectival view.

Aristotle connects his view about the matter of particular things with his view about ultimate matter. In the passage I will discuss, he does not say what specific stuff ultimate matter is, but he does offer a definition of ultimate matter. Simply by giving a definition, Aristotle clarifies a contested philosophical question.

Aristotle not only clarifies the question, but also addresses how to answer it. Aristotle's definition allows that ultimate matter might well turn out to be some ordinary familiar stuff. Here, too, Aristotle is rejecting a rival view that he does not make explicit. This is the view that ultimate matter must be *imperceptible* and *neutral*. By this, I mean that ultimate matter cannot have the properties that perceptible matter has (although it might have other properties that explain the properties of perceptible matter). Thus no perceptible stuff could be ultimate matter. This rival view, unlike the first, was not particularly widespread. However, Aristotle found it in Plato's *Timaeus*, and this is a reason to think that he is responding to that text, even though he does not mention the *Timaeus* explicitly.

Moreover, the *Timaeus*, in the very same passage that advances this view about ultimate matter, espouses substantivalism. So *both* of the views Aristotle is rejecting here in $\Theta.7$ appear alongside one another in Plato's *Timaeus*.¹

Importantly, the *Timaeus* does not simply juxtapose these two views, but presents one as a consequence of the other. The view about ultimate matter is supposed to follow from substantivalism, together with certain assumptions that were, for both Plato and Aristotle, obvious. It is for this reason that Aristotle is at pains in $\Theta.7$ to reject both views together. Aristotle's adjectival conception of matter makes possible a new way of thinking about ultimate matter. Aristotle thinks that ultimate matter need not be imperceptible and neutral. Ultimate matter is what does not derive its material character (specified by an adjective) from anything other than itself.

The text to be discussed falls into three brief sections. I will follow Aristotle's order of presentation, since it follows the logic of the argument. In the first section, Aristotle presents his adjectival conception of the matter of particular substances. He is here rejecting substantivalism. In the second section, he presents his definition of ultimate matter. He is here rejecting the Timaeian view that ultimate matter is neutral. In the third section, Aristotle claims that there is a close connection between the metaphysics of qualities and of matter, as well as a close connection between the corresponding terms: qualitative adjectives (such as 'white'), which say what something is like, and material adjectives (such as 'wooden'), which say what something is made out of. This explicit comparison is the basis for my calling Aristotle's conception of matter adjectival.

I will try to show how Aristotle's adjectival conception of matter helps to make possible his claim that there are composite substances. Against the background of the rival conception of matter, we will be able

¹ The interpretation of the relevant passage from the *Timaeus* is difficult and debated. Aristotle's term for matter, ὕλη, does not occur, nor does any other term for matter. For this reason, it is contested whether Timaeus should be understood as giving a view about matter at all. It is, however, clear that Aristotle understood Plato to have advanced a view about ultimate matter in the *Timaeus*. See *de Caelo* III.8 (306b15-22), where the issue is precisely the neutrality of ultimate matter; *de Generatione et Corruptione* II.1 (329a13-24); and *Physics* IV.2 (209b11-17 and 210a1-2). I assume only that Aristotle understood Plato in this way, not that this is the way we should understand Plato. Some recent writers who have dealt with this passage of the *Timaeus*, and who will direct the reader to yet further discussion, are Zeyl (1975), Gill (1987), Silverman (1992), Harte (2002), Brodie (2003), and Johansen (2004).

to understand both the internal coherence of this text and its philosophical significance.

Motivating Substantialism

It will be helpful to begin with some general reflection on the notion of matter. In Aristotle's philosophy, the notion of matter appears to have arisen in connection with the notion of *change*. The notion of matter does not come up simply by asking what things are made out of. For instance, one might ask what (if anything) water is made out of, and conclude that it is made out of hydrogen and oxygen. But this is not what Aristotle does. Rather, he introduces the notion of matter as that which underlies a change. It is matter that acquires or loses the property in question in any given change. Thus matter is also a constituent of whatever comes about in a change. For instance, if the change is Socrates' becoming wise, Socrates is a constituent of the resulting sage. And if the change is some wood's becoming a house, then the wood in question is a constituent of the resulting house. Matter is a constituent, but this is a consequence of the role that matter plays in change. For this reason, views about change can be the basis for views about matter.²

In particular, Aristotle wants to reject a conception of matter that is driven by a certain way of thinking about change. By borrowing a fable from Plato's *Timaeus*, we can see what is appealing about this view of change, and also about the corresponding view of matter. The fable goes like this:

Suppose you were molding gold into every shape there is, going on non-stop remolding one shape into the next. If someone were to point at one of them and ask you, "What *is* it?" your safest answer by far, with respect to truth, would be to say, "gold," but never "triangle" or any of the other shapes that come to be in the gold, as though it *is* these, because they change even while you're making the statement. However, that answer, too, should be satisfactory, as long as the shapes are willing to accept "what is such" as someone's designation. This has a degree of safety. (*Timaeus* 50a-b, trans. Zeyl in Cooper)

What precisely is the problem with saying of one of the figures that it is a triangle? It is not simply that one says, 'It is a triangle,' but that one

² See, for instance, *Physics* I.7 and *Metaphysics* A.1-2. It is controversial whether, and in what sense, Aristotelian matter persists *once the change is over*. I think that Aristotle attributes to his predecessors a view about the persistence of matter that he himself does not accept. But he does not simply contradict it. Rather, he accepts a suitably modified version of it. The controversial question is *how* he modifies the view, but that question need not be decided here.

says this in response specifically to the question, ‘*What* is that?’ The question is asking what the item is, and not what it is like, how it is temporarily disposed, or what quality it happens to have.

Timaeus assumes that, if something stops being *what* it is, then it necessarily stops being anything at all. It is destroyed. So, for instance, if a triangle is what something is, then it cannot survive while ceasing to be a triangle – no matter when it ceases to be a triangle.³ The point is not that the gold is a triangle only briefly. The fact that the gold ceases to be a triangle “even while you’re making the statement” makes the problem particularly dramatic, but it is not the source of the problem. The source of the problem is that what the thing in question really is, is gold, and not any shape that the gold temporarily takes on. Both sentences, ‘That is gold,’ and ‘That is a triangle,’ are true. But one of them says what this *really* is, while the other says, instead, what this is like.⁴ It says how this is temporarily disposed, much as the sentence, ‘That is a puppy,’ says of a dog that it is at a certain stage of development. The fact that the dog will, if all goes well, survive as it ceases to be a puppy is due to the fact that a puppy is not *what* the creature is. On the other hand, the fact that the dog could not possibly survive even as it ceases to be a dog is due to the fact that a dog is what the creature is.

The point of the fable depends crucially on the intuition that there is some *single* thing that persists when the gold goes from being a triangle to not being a triangle. Timaeus tells the fable in such a way as to make this plausible. We can imagine ourselves focusing our attention on *that* bit of gold, and following its metamorphoses.

Timaeus, through the fable, develops a view about change in general. The view that Timaeus wants us to adopt is this:

In any change, there is something underlying the change which is first *F* and then *G*.

³ One need not think that this is the correct account of these few lines from the *Timaeus*, in order to accept the proposed interpretation of Aristotle. One need only agree that a reasonable person – Aristotle – could have taken these lines this way. Verity Harte gives an account of the passage that is somewhat similar to this one, but differs in the following important way. She thinks that the gold is “a medium in which the shapes are formed [e.g., etched], not . . . a stuff from which they are made” (2002, p. 257). I infer that she would deny that the gold is a triangle. Aristotle thought of the figures, I think, as composites of gold and shape. Harte, as I read her, thinks of the figures as shapes, which require the gold as a medium, but of which the gold is not a part.

⁴ Cf. “what is such” (τὸ τοιοῦτον) from the quotation, at 50b4.

This premise, together with the assumption that for something to stop being what it is, is to perish, would seem to entail that substantial change is impossible. Here's why.

In any change, there is some underlying thing. The underlying thing changes from (say) F to G . That is, at the beginning of the change, the thing is F , but not G . At the end of the change, that thing is G , but not F . (Perhaps G is simply *not- F* , or F simply *not- G* .) It would seem to follow that:

In any change from F to G , neither F nor G is what the thing that underlies the change is.

One reaches this conclusion by considering the relation between what underlies the change, F , and G . F cannot be what the underlying thing is, since the underlying thing goes on being even after it ceases to be F (in particular, it is G). And G cannot be what the underlying thing is, since the underlying thing already was before it became G (in particular, it was F). Thus F and G are not what the underlying thing is.

But this conclusion seems to be incompatible with the possibility of generated substance. For substances are ontologically basic. Substances are what things are. For instance, a human being is what Socrates is. In specifying a substance, one specifies the answer to a what-is-it question about something. In specifying the answers to other questions, such as how-much, one specifies not substances, but properties that substances have. According to Aristotle, these other properties, such as qualities and quantities, depend on the substances that they are the properties of. Since they depend on substances, they are not ontologically basic, and hence are not themselves substances.

The generation of a substance would have to involve some matter that is first *not- G* and then G , where G is what the generated substance is. But, according to the considerations just given, G could not be what the product of the change is. Rather, the underlying thing, which existed before the change began, is what the product is. For instance, consider whether an ordinary wooden box is a substance. Generating a box involves some matter that is first not a box, and then a box. Hence a box is not what the product is. If something becomes a box, then a box is just a way that something is temporarily disposed; it is not what that something is.

Thus this way of thinking about change seems to justify the thought – which may have seemed very appealing anyway – that a thing's matter is what it is. This is a synchronic claim, about a thing and its matter at some time. Water is H_2O ; a diamond is carbon. We do not, of course, call just

any carbon a diamond, any more than we call just any dog a puppy. But carbon is nonetheless what the diamond is, just as a dog is what the puppy is. This is what I called *substantialism*: it is the view that what things are – their substance, if you will – is their matter.

This view seems to have many modern adherents, as I have tried to suggest with my examples.⁵ And it seems to be found in the *Timaeus*. Aristotle found it in many other earlier philosophers as well, as he explains in *Metaphysics* A.3. There he attributes to “the first philosophers” the following view:

Nothing is either generated or destroyed, since this sort of entity [i.e., matter] is always conserved, as we say Socrates neither comes to be absolutely when he comes to be beautiful or cultured, nor ceases to be when he loses these characteristics, because the underlying thing, Socrates himself, remains. (983b11-17; trans. Ross in Barnes, modified)

These philosophers believed that all change, even the most radical, is of the same type as Socrates’ becoming cultured. All changes are changes in the disposition of some matter. No changes constitute the genesis of a substance. This view about change is connected with a view about matter: that the matter of a thing is what it really is.

Rejecting Substantialism

Aristotle’s general response to this view about change is complex, and is dispersed over several texts. Θ .7 does not explain how to block the general argument against substantial change that I just gave, but it does reject the substantialist view of matter. The rejection of the substantialist view of matter is an important step forward. It makes room for the thought that some matter might be first *F* and then *G*, where *G* is what the product is, even if *G* is not what the matter is.

⁵ Kripke tersely advocates the view that the “*substance* of which [something] is made is essential [to it]” (1972, p. 114 n. 57). He does not speak in terms of a distinction between what something is, and what it is like, but I think that it is this very intuition that stands behind his view. Similarly, Locke says in the *Essay*, “If any one should be asked, *what* is the subject wherein Colour or Weight inheres, he would have nothing to say, but the solid extended parts: And if he were demanded, *what* is it, that that Solidity and Extension inhere in, he would not” be able to give a satisfactory answer (1975, pp. 295-206; Ch. XXIII, §2; italics mine). The problem seems to be that the question concerns *what* things are, but the only available answers concern what things are like, not what they are.

Aristotle's view is that the matter of a composite substance is not what the substance is, but that the substance derives a *material character* from its matter. This material character is *like* a qualitative property, and, accordingly, it is properly specified by an adjective. Aristotle is using the metaphysics of qualities as a model for thinking about material character. To borrow an example from Aristotle: some boxes are wooden. The term, 'wooden,' specifies the box's material character. This character, like a quality, may even change, within the limits imposed by what the substance is. A box, for instance, may be changed from wooden to leaden. But the very term, 'wooden,' is supposed to suggest Aristotle's view. The box is *wooden*, where the very form of the word indicates that it says what the box is *like* (ποῖον), not what it is (τί).

In order to formulate this claim in general terms, Aristotle introduces the peculiar word *that-en* (ἐκείνινον). He introduces the term abruptly and without explaining why, but the background I have sketched will allow us to see his reasons. The term itself is a strained neologism – as strained in Greek as in English.⁶ 'Thaten,' like ἐκείνινον, is a generalized adjective, formed on the model of such words as 'golden,' 'bronzon,' and 'wooden.' The very term echoes the flurry of demonstrative adjectives in the *Timaeus*. Timaeus says that certain things are "not this, but such" (49d4-50a4), while Aristotle thinks that certain things are "not that, but *thaten*." This is an important reason to accept that Aristotle is thinking of the *Timaeus* in $\Theta.7$. Timaeus works with only two concepts: whatness and suchness. Aristotle introduces a third concept alongside them: material character (*thaten*-ness).

What does it mean for something to be wooden, golden, bronzon, earthen, or, in general, *thaten*? Evidently, something is wooden if it *consists of* or *is made out of* wood; golden if it consists of or is made out of gold; and, in general, it is *x-en* if it consists of or is made out of *x*. (I will use 'consists of' and 'is made out of' as synonyms.) Adjectives in *-en* specify the character of the object, insofar as its character derives from its matter. They do not specify the matter; terms such as 'gold' and 'wood' do that.

⁶ Perhaps for this reason, the term never became popular, unlike many of Aristotle's other technical terms. Of course, Aristotle himself hardly uses the term: it occurs only here, and in Z.7 (1033a5-7). And perhaps this is because he knew how strained it was. Its only occurrences in later Greek are in the commentary attributed to Alexander, in commenting on this passage and on the passage from Z.7 just cited.

Adjectives in -en also have a looser usage that I mean to be setting aside: some things are called golden not because they are made out of gold but because they resemble gold – for instance, a golden sunset resembles gold in color and brightness. But a sunset is not golden in the sense relevant to Aristotle’s discussion. (At least some of the corresponding Greek adjectives, such as χρύσεος, have such uses.)

Being thaten is not to be confused with *having come into being out of*. When I say that something is made out of a certain stuff, this is a present tense claim. It does not concern the history of the item. But when I say that something came into being out of a certain stuff, I am saying something about the history of the item.

In many familiar cases, both relations hold at once. For instance, a statue that came into being out of some bronze is, typically, bronzen. A ring that came into being out of some gold is, typically, golden. But either one of the relations can hold without the other holding. One might make a box out of wood, and gradually replace its parts with lead. When the box first came into being, it was wooden. Gradually, as its parts were replaced, more and more of it was made of lead, and less and less of wood, until, finally, it was not a wooden box at all, but a leaden one. In that case, although the box came into being out of wood, it was at some later time, leaden, and no longer wooden. To say that something is *x-en* is just to say that it consists of *x*. But it may have come into being out of something quite different from *x*.⁷

Many objects consist of several stuffs. How should we use *thaten* terms in speaking of such things? Although Aristotle makes no statement about this, it seems straightforward to extrapolate what we ought to say. Suppose I make a shield out of wood and leather. Presumably the shield is (in part) wooden and (in part) leathern. What are we to say about the material character of complex living things, such as human beings? If our answer for the shield was correct, then presumably human beings are fleshy, bloody, and bony. Aristotle understandably leaves such examples aside, for the sake of simplicity.

In introducing the term *thaten*, Aristotle makes two claims: first, a negative claim that certain things are not “that” but rather “*thaten*”; second,

⁷ Thus I take a different view from that of Besnier, who sees the term *thaten* as serving primarily to connect a thing with its origin (p. 146). As I see it, the fundamental problem is not how to connect generated things with their material origin, but to reject the substantialist conception of matter.

a claim connecting *thaten* with the notion of potentiality, which he had discussed earlier in Θ.7:

It seems that what we say is not this but *thaten* – for instance, a box is not wood but rather wooden, and wood is not earth but rather earthen, and, in turn, earth, if it is, in the same way, not something else, but rather *thaten* – in each case, the latter is without qualification potentially that.⁸ For instance, a box is not earthen, nor is it earth, but wooden, for this is potentially a box and this is the matter of a box, [wood] without qualification of [box] without qualification, this wood of this box. (Θ.7 1049a18-24)⁹

Aristotle's first concern is to say that something is “*not* this, but rather *thaten*.” This negative point is reiterated in the example. The box is said to be *not* wood, but rather wooden. Presumably, given the right sort of box, it is trivial that the box is wooden, rather than bronzen or leaden. Not trivial is that this here thing is a wooden box, rather than some wood, arranged box-wise.

There is only one other passage in Aristotle in which the term *thaten* occurs. There, too, the same negative point is made: “Some things that come into being from something, as matter, are called, when they come into being, *not* that, but rather *thaten*” (my emphasis; Z.7 1033a5-7). Why does Aristotle say “*some* things”? In light of the immediate sequel, in which he discusses a human being's becoming healthy, I think he means to distinguish substantial and non-substantial changes.¹⁰ “Some things” restricts the claim to substances. It excludes, for instance, a human being's becoming healthy. The resulting product is not a human-being-en healthy thing, but a healthy human. This is to be contrasted with, say, the production of a wooden box out of some wood. When a box comes into being from wood, then the product is not boxy wood, but a wooden box.

There is yet another passage where Aristotle seems to be making the same point. Although the general term *thaten* (ἐκείνινον) does not occur, several related terms do:

For when anything has been completely shaped or structured, we do not call it that of which it consists [ἐκείνο ἐξ οὗ ἔστιν]: e.g., we do not call the statue bronze or the candle wax or the bed wood, but, using a derivative name [παρωνυμιάζοντες], we call them bronzen, waxen, and wooden respectively. (*Physics* VII.3 245b9-12, trans. Hardie and Gaye in Barnes, modified)

⁸ There is a slight, and easily intelligible anacoluthon in the Greek, which my awkward English is supposed to capture.

⁹ Throughout, translations from Θ.7 are my own.

¹⁰ I am accepting the emendation proposed by Frede and Patzig, *ad loc.*

These are cases of substantial change. They are distinguished from cases of alteration, in which we *do* “call something by its original name” after it is changed, e.g., calling something that is first solid and then liquid “wax” (249b12-16).

In all three passages (*Metaphysics* Z.7, Θ.7, *Physics* VII.3), Aristotle makes the same negative claim: when a substance comes to be out of “that,” then it is not “that” but rather “*that-en*.”¹¹ Substantial changes are distinguished from other changes by whether or not the product of the change is called by the name of the matter. Aristotle insists on the reality of substantial change, and its distinctness from other sorts of change. The term *thaten* helps formulate, in general terms, a claim about the relationship between substances and their matter.

The passage on which I am focusing, from Θ.7, also contains a further claim, not hinted at in the other two passages, where Aristotle does not mention the notion of potential being. This claim asserts that there is a systematic connection between being *thaten* and potential being:

if *y* is *x-en*, then *x* is potentially *y*.

Our discussion of *being thaten* sheds some light on the protasis: ‘*y* is *x-en*’ means ‘*y* is made out of *x*.’ So Aristotle is claiming that *x*’s being potentially *y* follows from *y*’s being made out of *x*. And *x*’s potentially being *y* means, on the one hand, that *x* is not actually *y* (in its own right): wood is not, as such, actually a box. But on the other hand, *x* is *y* in some sense – namely, potentially. We’ll return to this in a moment.

Why does Aristotle assert this connection between potentiality and *thaten*? He does not offer any explicit argument for the claim. I think this is because it follows straightforwardly from the discussion of potential being in the earlier part of Θ.7.

That discussion focused on the question *when* something is potentially *F*. Consider, for instance, the generation of a human being. At what point in the process of generation is there something that is potentially a human being? Is a seed already potentially a human being? Or is it only later in the process that something is potentially a human being? Aristotle gave criteria for potential being that marked off the *earliest* point in the genesis of an *F* at which something is potentially *F*. There were *two* criteria, depending on whether the principle of generation for the given object is internal to it or not. When the principle of generation of an *F* is internal,

¹¹ Cf. also *GC* II.1, 329a17-21, quoted below.

as it is for animals, there is a potential F as soon as the internal principle of generation is present. For instance, something is a potential human being as soon as, left to itself, it will become a human being. When the principle of generation of an F is external, there is a potential F as soon as everything is ready for the external principle of generation to produce an F . For instance, a heap of wood and bricks is potentially a house as soon as someone can make a house out of it simply by exercising the art of housebuilding (and not by doing anything else).¹² Any subsequent item in the process of generation (e.g., the foetus, or the house-frame) is *a fortiori* potentially F . (1048b37-1049a14)

Thus Aristotle's claim amounts to the view that, if y is x -en, then x is 'far enough along' in the genesis of y to be a potential y . For the moment, let us restrict our attention to artifacts, as Aristotle himself does here. If y is made out of x , then x must be such that it is completely ready to be made into y , without further preliminary work. For instance, some statues are bronzen; they are made of bronze. And this is possible because bronze is potentially a statue, in that bronze is ready to be made into a statue. More technically, bronze has the passive ability ($\delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma\ \kappa\alpha\tau\grave{\alpha}\ \kappa\acute{\iota}\nu\eta\sigma\iota\nu$) to be made into a statue.¹³

It does not follow from y 's being x -en that y came into being out of x in the first place. A leaden box may have come into being out of wood. Nevertheless, it is necessary, in order for there to be a leaden box at all, that lead potentially be a box. Otherwise, the replacement of the box's parts with lead would have resulted in the destruction of the box. Imagine, for instance, trying to replace the box's parts with rice paper or with water. In general, if x is not ready to be y , then y cannot not be made out of x . A sequence of changes might start with x and yield y , but those changes must first turn x into something that is potentially y . For instance, one might turn mud and straw into bricks, and then make a house out of the bricks. If y is made out of x – if y is x -en – then x must fulfill the criterion set out earlier in Θ .7: "there is nothing that must be added or taken away or changed" before x is made y (1049a10-11).

The same argument applies to living things. No living thing could be made of material that was not potentially such a living thing: if a living

¹² It is a consequence of this way of thinking about potentiality that it will be quite unclear to us what is potentially a house, if we are unclear about what the art of housebuilding enables its possessor to do, and what it does not enable its possessor to do. Facts about potentiality derive, in part, from facts about the capacities of agents.

¹³ Cf. the discussion of such $\delta\acute{\upsilon}\nu\acute{\alpha}\mu\epsilon\iota\varsigma$ in Θ .1-5.

thing is *x-en*, then *x* is potentially a living thing of the relevant kind. As Aristotle says in *de Anima*, the bodies of living things are what potentially has life (II.1 412a27-28).

Aristotle is thus entitled to infer without much explanation that, if *y* is *x-en*, then *x* is potentially *y* (1049a21-22, quoted above).¹⁴

What is at stake here is the rejection of substantivalism. Even ordinary Greek usage suggests that substantivalism is wrong. That is why Aristotle writes of what “we say” in the quotation above (as well as in the passages cited from *Metaphysics* Z.7 and *Physics* VII.3). “We” are not “we Aristotelians,” but “we speakers of Greek.”

Timaeus’s idea was that, if you were to point to one of the gold figures and ask, ‘What is that *really*?’ the “safest answer by far, with respect to truth” would be ‘gold’ (50b1-2). Aristotle wants us to think that this answer, far from being the safest, is neither obvious nor even correct. Thus he elsewhere explicitly rejects the fable of the golden figures, saying, “Things which come to be and pass away cannot be called by the name of the material out of which they have come to be: it is only the results of alteration which retain the name. However, he [Timaeus] actually says that far the truest account is to affirm that each of them [the figures] *is* gold” (GC II.1, 329a17-21; trans. Joachim in Barnes, modified).¹⁵ In Θ .7, his rejection of Timaeus’s view is apparent when he says: “if [earth] is, in the same way [as the box], not something else, but rather *thaten*” (1049a20-21, quoted above). Aristotle here implicitly assumes that the box is “not something else.” Why in the world would someone say that the box *is* “something else”? Well, for any substantivalist the box is something

¹⁴ The Londinienses (in the volume edited by Burnyeat *et al.*) wrongly attribute the converse to Aristotle (p. 131): if *x* is potentially *y*, then *y* is *x-en*. But this is not what Aristotle says, and it does not even seem to be true. They clearly mean to be restricting the condition to cases in which *x* is potentially *y* and *x* is the matter for *y*. But this restriction seems to make the claim vacuous, by assuming in the protasis that *y* is *x-en*. Moreover, their claim would seem to entail something obviously false: that each thing can have only one kind of matter. For the contrapositive of the claim they attribute to Aristotle is this: if *y* is *not x-en*, then *x* is *not* potentially *y*. Furthermore, their reading would, as they explain, entail that nothing is potentially ultimate matter. But Aristotle might well think that earth, air, fire, and water are all ultimate matter, but also that each of them is potentially the others. Indeed, this is what I think he thinks.

¹⁵ Aristotle is here assuming (rightly, in my opinion) that Timaeus’s golden shapes are supposed to stand for anything produced in any change whatsoever, including what we would normally consider substantial changes, such as the generation of an animal.

else – wood, or earth, or (for Timaeus) a bit of Receptacle, configured as a box.

According to Aristotle, the box is not something else. It is, rather, *something-else-en*. It *really* is a box – a wooden box, to be sure, but a box, and not merely some wood configured as a box. The box is not *that* (i.e., wood), but *thaten* (i.e., wooden). Similarly, the wood really is wood and not something else, although it is, for Aristotle, earthen.¹⁶ By insisting on specifying the matter with a ‘thaten’ term, Aristotle helps remove the temptation to think that the matter is what the substance is. For terms such as ‘wooden’ and ‘earthen’ are not even candidate answers to what-is-it questions, just as ‘the most beautiful of arts’ is not a candidate answer to the question, ‘What is rhetoric?’¹⁷

Hierarchy and Ultimate Matter

So far, we have spoken only about the relation of the box to the wood that it is made out of. But Aristotle refers to a hierarchy of matters: the matter of the box – wood – has, in turn, matter of its own – earth (1049a18-24, quoted above). Aristotle not only insists on the box’s being wooden, rather than wood, he also insists on the box’s being neither earthen nor earth. Even if wood is earthen, the wooden character of the box does not entail that the box is earthen.

This idea is justified by Aristotle’s notion of potentiality, as developed in the first half of Θ .7. That is why matter is discussed here, in connection with potentiality and actuality. For Aristotle’s notion of potentiality is not transitive: it does not follow from x ’s being potentially y and y ’s being potentially z that x is potentially z . Normally, transitivity fails.¹⁸ This

¹⁶ Thus I think Bostock, in interpreting a parallel passage from Z.7 (1033a5-23), gets the point of the term *thaten* precisely wrong when he writes, “if we did speak in the better way, then we would be able to see that, just as a healthy man is indeed a man, so a statue *is* actually some bronze, even though this is not what we normally say” (p. 128). Aristotle intends precisely to pick up on what we Greek-speakers do normally say, and precisely to deny that what a substance is, is its matter. Bostock’s statement about the statue is directly contradicted by *Physics* VII.3 245b9-12.

¹⁷ This is Polus’s answer to the question ‘What is rhetoric?’ in the *Gorgias* (448c2-9). Socrates rejects this not as a false answer, but as no answer (448d1-449a2). Here, as in the *Timaeus* and *Theaetetus*, there is a contrast between ‘what’ questions ($\tau\acute{\iota}$) and ‘what-sort’ questions ($\pi\acute{o}\lambda\omicron\nu$).

¹⁸ It is worth asking whether we can identify a class of cases in which transitivity holds. Here is at least one such class: when F is being able to do something, then what is potentially F is potentially engaged in using the ability to F . For instance, a

is because it is not enough, for x to be potentially y , that there be some series of changes or other that begins with x and yields y . Aristotle has a much more restrictive notion of potentiality. For x to be potentially y is for x *itself* to be able to become y , not for something that might be produced out of x to be able to become y . x must not be in need of further transformation. The earth, for instance, is not ready to be made into a box. It is only once it has been transformed into wood that a box can be made out of it. Thus the earth is not potentially a box, even though the earth might be made into something that could in turn be made into a box.

For this reason, the wooden box fails to be earthen, even though the box is of wood and wood is earthen. But why, we wonder, is that important? Aristotle notes not only that the box fails to be earthen, but also that it fails to be earth. That the box is not earthen, is obvious. "We Greek speakers" say that the box is wooden, but no one says that it is earthen. The important thing, I suggest, is that the box is not earth.

On a substantialist view, the box would seem to turn out to be earth. If wood is what the box is, and earth is what the wood is, then the box would seem to be, in the last analysis, earth. (Or perhaps something other than earth, if earth, like wood, comes into being out of some underlying matter.) If we think that the matter of the box is what the box is, then, by parity of reasoning, we should also think that the matter of the box's matter is what *it* is. Thales presumably shared this intuition. That is why he thought he could say that everything is water: he thought that water is the ultimate matter of everything, and he thought that the matter of a thing, and in particular, its ultimate matter was what it was. It is also why, even though a human being is made of flesh and bones, one might think that a seething mass of quarks is what a human being is.

It is these considerations about the hierarchy of matters that introduce the question of ultimate matter. Aristotle's definition of ultimate matter is, in a way, straightforward. But it is hard to see what Aristotle thinks is at stake. I suggest that Aristotle is here responding to a view espoused in Plato's *Timaeus*. And this view, unlike substantialism, was not widely shared among Aristotle's predecessors. Indeed, it seems to have been original with Plato. But in fact, it follows from substantialism, together with

small child and an adult who has learned (but is not using) geometry are both potentially geometrizing (*de Anima* II.5 417a22-30). I take the general claim to be the point of an obscure passage in *Metaphysics* Θ.8 (1050a16-21). I conjecture that these are the *only* cases in which potential being is transitive. I am indebted to Josef Stern for pressing me on this question.

a modest further assumption. The assumption is that the most basic *perceptible* stuffs can be transformed into one another.¹⁹ This assumption is introduced in a famous passage of the *Timaeus*:

First, we see (or think we see) the thing that we have just now been calling *water* condensing and turning to stones and earth. Next, we see *this same thing* dissolving and dispersing, turning to wind and air, and air, when ignited, turning to fire. And then we see fire being condensed and extinguished and turning back to the form of air, and air coalescing and thickening and turning back into cloud and mist. When these are compressed still more we see them turning into flowing water, which we see turning to earth and stones once again. In this way, they transmit their coming to be one to the other in a cycle, or so it seems. (*Timaeus* 49b7-c7; trans. Zeyl in Cooper; second italics mine)

Timaeus is clearly working on the assumption that earth, air, fire, and water are the most basic of the perceptible stuffs. He speaks not only about these traditional four, but also about stones, wind, cloud, and mist (where cloud and mist are at a stage between air and water). This suggests that he is speaking about ordinary phenomena, which should be familiar to everyone. But he also speaks about these ordinary phenomena in a way that connects them with the Empedoclean theory that earth, air, fire, and water are the four basic stuffs.

It is unclear what is the subject of the changes described. On the one hand, Timaeus mentions nothing over and above the various perceptible stuffs that turn into one another. On the other hand, he strongly suggests that there is something (“this same thing”) that persists through these various transformations, and hence is distinct from these stuffs. Suppose we work on the assumption that earth, air, fire and water are the four basic perceptible stuffs, so that everything else is a mixture or state of them. Then this further subject is neither one of these four basic perceptible stuffs, nor some less basic perceptible stuff. Hence, Timaeus concludes, there is something further, not itself perceptible, that is the subject of their transformation into one another.

Having concluded that there is some subject of the transformations of the basic bodies, we wonder what it is. The first thing Timaeus asserts about it is its neutrality with respect to perceptible properties: “it has never in any way whatever taken on any characteristic similar to any of the

¹⁹ Of course, Plato’s *Timaeus* goes on, after the passage quoted, to make an exception for earth: it does not transform into fire, air, and water, nor they into it (54b5-d3). Verity Harte points out that Timaeus foreshadows this by saying here that we only *think* we see these transformations that are later said to be impossible (2002, pp. 237-238).

things that enter it" (50b8-c2). Timaeus calls it by various names, one of which is "the Receptacle": "the nature which receives all the bodies" (50b5-6).

Whether the Receptacle is the *matter* of earth, air, fire, and water, and, by extension, of other perceptible things, is disputed nowadays. This is (or should be) as much a dispute about what counts as matter as it is about how to read the *Timaeus*. However, if the Receptacle is matter, it is surely *ultimate* matter. That is, there is no further thing that the Receptacle is made out of, and there is no further thing that is the subject of the genesis of the Receptacle (which never came into being). Moreover, it is clear that Aristotle thought the Receptacle was matter.²⁰ This makes it very probable that Aristotle has in mind the *Timaeus* in his discussion of ultimate matter in $\Theta.7$.

Aristotle accepts that the elements can be transformed into one another. But he denies the picture of change connected with substantialism. Aristotle believes that it is possible for something to become *G*, where *G* is what the resulting thing is. Thus he can evade the argument for a *neutral* ultimate matter, such as the Receptacle. In particular, Aristotle denies the premise implicit in the words "this same thing." He would claim that there is no single same thing that persists through the changes mentioned in the *Timaeus* passage. Of course, Aristotle owes us an account of change, but it is not the purpose of $\Theta.7$ to give that full account.

All this leaves the question open how we should conceive of ultimate matter – a question not only about what ultimate matter is in fact, but also a question about what it is to be ultimate matter. As long as one believes in the inter-transformability of the basic perceptible stuffs, it is tempting to think that ultimate matter is, obviously, that, I-know-not-what, which underlies their inter-transformation. But Aristotle provides a different way of thinking about ultimate matter. Ultimate matter, according to him, is that which is not *thaten* in virtue of anything else. Ultimate matter differs from derivative matter, in that it does not derive its material character from anything other than itself.

It now turns out that ultimate matter might simply be one of the ordinary perceptible stuffs:

But if there is some first thing, which is no longer called *thaten* on the basis of something else, this is first matter. For instance, if earth is airy, and air is not fire but fiery, then fire is ultimate matter, which is not a *certain this*. ($\Theta.7$ 1049a24-27)

²⁰ See note 1 for passages supporting this claim.

This thought experiment does not, of course, assert that fire is ultimate matter. But the point of the thought experiment is not simply to give some example, *any* example, of the definition. He wants to emphasize that ultimate matter might well be some ordinary perceptible stuff.²¹

He emphasizes this here because it is connected with his denial of substantialism. For substantialism is connected with an analysis of change on which, if the four basic perceptible stuffs can be turned into one another, then there must be some distinct further sort of stuff underlying them. This was, in fact, the burden of the argument just quoted from the *Timaeus*. Timaeus asks his auditors to direct their attention to some bit of water, which is transformed into other basic stuffs. He wants us to think that a certain *single* thing underlies that entire series of changes. And this derives some plausibility from the fact that we can focus our attention on ‘this’ bit of water, as ‘it’ turns into something else. Now Timaeus himself explicitly connects this view with substantialism. Just one page later, in the story of the golden figures, Timaeus espouses substantialism, apparently in order to convince us that the Receptacle is what all perceptible bodies are.

Aristotle, too, thinks that earth, air, fire, and water are the basic perceptible stuffs, and that they are inter-transformable. He gives an account of ultimate matter on which ultimate matter might well turn out to be one of them, rather than something over and above the perceptible stuffs. For Timaeus, ultimate matter is *ultimate* in being something distinct from and underlying all perceptible stuffs. For Aristotle, ultimate matter is ultimate in having a material character that derives solely from itself, and not from anything else.

A further important contrast between Timaeus’ view and Aristotle’s is this. Timaeus’ notion of ultimate matter creates a strong presumption that there is only one kind of ultimate matter. His view is not strictly incompatible with the claim that there is more than one kind of ultimate matter. But it is hard to see how one could motivate distinctions among various kinds of ultimate matter, given that ultimate matter’s cardinal feature is its neutrality with respect to all the features of perceptible bodies.²²

²¹ As far as I can see, it is perfectly compatible with Aristotle’s definition of ultimate matter that some *thaten* term apply to it. Ultimate matter may, apparently, be called *thaten* in virtue of itself: in the thought experiment perhaps the ultimate matter, fire, is fiery.

²² There is a complication about this, since Timaeus also says that there are “tracks” (ἵχνη) of the simple bodies in the Receptacle, even before the simple bodies have been

Aristotle's definition of ultimate matter, by contrast, fits easily with the thought that there are several kinds of ultimate matter. It is perfectly possible that there be several different kinds of ultimate matter, each of which is not *thaten* in virtue of anything else. His definition leaves it an open empirical question how many kinds of ultimate matter there are. Perhaps Aristotle's considered view is that there are four kinds of ultimate matter: earth, air, fire, and water, none of which is *thaten* in virtue of anything else. This would introduce a complexity not hinted at in Θ .7: that something that is not *thaten* in virtue of anything else might be transformed into something else that is not *thaten* in virtue of anything else. Of course, Aristotle's definition is perfectly compatible with a Timaeian view, on which there is only one kind of ultimate matter, and it is something distinct from earth, air, fire, and water, underlying their transformations into one another. Which view one attributes to Aristotle depends on how one interprets passages in the *Physics* and *de Generatione et Corruptione*. But, as far as the definition of ultimate matter is concerned, both are live options.

Ultimate Matter as Substance

Aristotle goes on to address a problem concerning the status of ultimate matter as a substance (1049a27-b2). The problem is this. Matter has a claim to being substance, and in particular to being a subject. We expect a subject to be a *certain this*. But ultimate matter is not a *certain this*. In particular, the ultimate matter arrived at in Aristotle's thought experiment – fire – is not a *certain this*, as Aristotle explicitly notes.²³ This might be thought to impugn its claim to be not only matter, but ultimate matter, something that is a paradigm of matter, and which therefore has a powerful claim to be a subject.

Aristotle responds to this worry by explaining that there are two kinds of subject-hood. The subject involved in the one sort of subject relation is a *certain this* (τόδε τι). The other is not. Since Aristotle connects being a substance and being a subject, he also distinguishes two types of substance,

formed (53a7-b5). But these are not kinds of Receptacle, but something like local properties of the Receptacle.

²³ One might think that Aristotle is not saying that fire as such is not a *certain this*, but that fire, *qua* matter, is not a *certain this*. This seems to me possible, but unlikely. The only point I can see to Aristotle's remark is that fire, not being a *certain this*, is the appropriate kind of thing to be ultimate matter.

corresponding to the two kinds of subject-hood. Aristotle does not attempt here to offer a full account of these two kinds of subject-hood. And a full interpretation of his view on the issue would involve an account of the notion of a *certain this* (τόδε τι), which is beyond the scope of this paper. However, it seems to me that these lines substantially enrich and illuminate what Aristotle has said. In particular, these lines clarify the sense in which Aristotle has an *adjectival* view of matter. Hence I offer the following somewhat speculative interpretation of them.

Aristotle's view, as I have interpreted it, is primarily a view about matter, not about the *terms* used to specify matter. Still, I have called Aristotle's view adjectival because he formulates it by means of an adjective, *thaten* (ἐκείνινον). Yet it is not mere coincidence that Aristotle formulates his view using an adjective. He thinks there is a systematic correspondence between the metaphysics of qualities and the metaphysics of substantial matter:

For that of-which, i.e., the subject, differs [from case to case] by being a *certain this* or not. For instance, the subject of qualities is a human being, both body and soul, and culture and pale are qualities (for, when culture is present in him, [the human being] is called not culture but cultured, and not paleness but pale, and not, indeed, a walk or a change, but walking or changing, like *thaten*). Of the things that *are* in this way, the last [i.e., the ultimate subject] is substance. Of the things that are, not in this way, but what is said [of them] is a certain form and *certain this*, the last [i.e., the ultimate subject] is matter and substance in the sense of matter [οὐσία ὑλική]. (Θ.7 1049a27-36)

In outline, Aristotle here says that there are two sorts of subject-hood. Subjects of the one sort are necessarily a *certain this* (τόδε τι). Thus fire, not being a *certain this*, is excluded from enjoying this sort of subject-hood. However, the other sort of subject-hood does not require being a *certain this*, and thus presumably can be enjoyed by fire. Aristotle gives an example of a subject of the first sort, which is a *certain this*: a human being. He compares the qualities that such a thing might have with the material character that something has in virtue of its matter.

Consider a human being who is pale and cultured. Now, the human being is a *certain this* (τόδε τι). And the human being is the subject of qualities: it is pale and cultured. The qualities, paleness and culture, come to be present in the human being. With that, the human being becomes pale or white. Aristotle says that, “when culture is present in him, [the human being] is called not culture but cultured, and not paleness but pale, and not, indeed, a walk or a change, but walking or changing.” This is, of course, not a terribly surprising thought – so why does Aristotle say

it?²⁴ I suggest that Aristotle is reminding us of his analysis of the difference between changes in a persisting substance and the generation of a new substance. He reminds us of this analysis in order to explain how the material character of a thing is like other (changeable) properties.

Aristotle analyzes accidental and substantial change in terms of the terms used to specify the acquired property. A human being's becoming pale is a change of quality, not the generation of a substance. When paleness becomes present to the human being, the human being is pale, not paleness. The presence of paleness in the human being qualifies it, such that it is pale, rather than constitutes it, such that it is paleness. In such cases, the thing is called by a name *derived from* the name of the quality, rather than by the name of the quality itself: it is called pale, not paleness; cultured, not culture. When a (full-fledged) substance comes into being, a *certain this* comes into being. Some matter, which does not already in its own right constitute that *certain this*, becomes a *certain this*; for instance, it becomes a certain human being. In that case, when *human being* is present to the matter, the matter becomes precisely a human being: it is called by the same name as that which has become present to it, and not by a different name. But this linguistic fact reflects the metaphysical fact that the imposition of paleness on something does not make it paleness, whereas the imposition of human being does make it a human being.²⁵

The human being is the *ultimate* subject, in which paleness, or some other quality, might be present, in virtue of being a *certain this*. Whatever it is that constitutes the human being, became a *certain this* when it became a human being. Because the human being came into being, there is some further subject underlying it. Aristotle intimates this with his reference to "body and soul," the body being the underlying matter that, unified with the soul, constitutes a human being. However, the further

²⁴ Cf. *Theaetetus* (156e): "The eye is filled with sight; at that moment it sees, and becomes not indeed sight, but a seeing eye; while its partner in the process of producing color is filled with whiteness, and becomes not whiteness but white, a white stick or stone or whatever it is that happens to be colored this sort of color" (trans. Levett in Cooper). See also *Categories* 8 (9a29-b9), *Timaeus* (51b4-6), and *Gorgias* (448b1-449a2; cited above).

²⁵ This parallel between linguistic and metaphysical claims also arises in *Categories* 5 (2a25-34). There, he says that one item's dependence on another for being a certain way (e.g., white) is reflected in the fact that the definition of the second item (whiteness) is not applicable to the first item (the white thing).

subject that became a *certain this*, was not any particular definite thing at all: it was not a *certain this* (τόδε τι).²⁶

I suggest that, to be a *certain this*, is to be a definite instance of a kind, such that there is always a fact of the matter about whether a *certain this* continues to exist or not. For example, to be a human being is always to be a *certain* human being – some one human being, which came into being at some time (or perhaps over some time-period), perishes at some time, and is distinct from all other human beings. There is, on this account, always a true or false answer to the question whether this human being is the same as that one.

By contrast, fire, on this account, is not a *certain this* because there is not always a fact of the matter about whether some fire persists or not. (Remember that fire, for Aristotle, is a stuff, as water is.) To be fire is just to be some fire, not to be a certain definite (τι) fire, which came into being at some time, perishes at some time, and is definitely distinct from other fires. Sometimes, there is simply no true or false answer to the question, “Is *this* fire the same fire as *that* fire?” When I add a minuscule amount of fire to some fire, is the same fire enlarged slightly? Or is there simply a new mass of fire? What if I add not a minuscule amount, but precisely as much as I started with? Or what if I add this fire to some other, gigantic mass of fire? It is unclear what to say about these cases. In denying that fire is a *certain this*, Aristotle is denying that there is any fact of the matter about the answers to these questions. There certainly is a fact of the matter about whether some fire has ceased to be fire. Fire ceases to be fire when, for instance, it is extinguished. But there are no definite conditions for this fire’s ceasing to be *this* fire.

I am not attributing to Aristotle the extreme, and implausible, view that there is *never* a fact of the matter about whether this and that fire are the same. In some cases, it is quite clear whether this fire and that fire are

²⁶ This view also introduces a complication in the notion of change. I just introduced Aristotle’s analysis of change as if there were only two kinds of change: the genesis of a new substance and the modification of a persisting substance. If there are two kinds of substances, one of which is a *certain this*, one of which is not, then there might well be importantly different kinds of change in each of the two kinds of substances. For instance, a change in something that is not a *certain this* might have the result that the subject of the change is no longer around because it has become the matter of a substance: “when there is a house, the buildable is no longer there” (*Physics* III.1 245b11). However, Michael Frede thinks this is misleading, and that the buildable materials remain potentially a house even when they are in a completed house, although they are not potentially the very house they actually constitute (1994, pp. 191-192).

identical or distinct. For instance, if a piece of wood is lit on fire and only partly incinerated, and then lit on fire again, presumably the fire in the second case is distinct from the fire in the first. Aristotle is saying that a bit of matter does not have fully determinate identity conditions intrinsic to it. Sometimes there is no fact of the matter about whether it is the same as that. This doctrine is daring enough to be interesting (and to need further discussion). But it is not nearly as implausible as the view that it is never the case that some matter (constituting one object) is the same as some matter (constituting another object).²⁷

This, I suggest, is what Aristotle had in mind several lines earlier, in a passage already quoted. Speaking about wood as the matter of a box, Aristotle said, “[wood] without qualification [is the matter] of [box] without qualification, this wood of this box” (1049a23-24). One might think that Aristotle is merely differentiating particular claims from general ones: matter-tokens constitute substance-tokens, matter-types substances-types. I think Aristotle has something more interesting in mind. Wood, on its own, does not have fully determinate identity conditions: it is not a *certain this*. But when some wood constitutes a box, it inherits determinate identity conditions from the box it constitutes. But that is not an identity that the wood can carry with it, if the box it constitutes is destroyed.

One might object that it surely is possible for me to make a box out of *just this wood*, which used to constitute another box. Doesn't that indicate that the wood has an identity that goes beyond that of the box? But this is not a problem. For wood's not being a *certain this* only means that there is not always a true or false answer to the question, “Is this wood the same wood as that wood?” If there is sometimes a true answer to that question, then that is enough to enable us to make a new box out of *this* wood that used to constitute that box.

The following, at least, is clear: Aristotle wants to say that matter, and in particular ultimate matter, can have the status of substance, *despite* failing to be a *certain this*. But ultimate matter's lack of definiteness does weaken its standing as substance: it is not substance without qualification but only “substance in the sense of matter.” By contrast, Aristotle registers no qualification on the sense in which definite things are substances.

²⁷ We also distinguish one fire from another in a way that is not metaphysically significant: there is a certain fire in the grate and another fire on the stove. But those distinctions, for Aristotle, are *ad hoc* and pragmatic. There is no underlying metaphysics of the fires in question, which determines in every case what it would be, for each, to persist or to perish.

Thus matter does qualify as a substance, but only in a demoted sense. This demotion is crucial for Aristotle's being able to maintain that substances come into being. And it derives from the correspondence between matter and those paradigmatic non-substances, qualities. The analogy between qualities and matter consists, in the first instance, in the way qualities and matter bestow names on things.²⁸ A thing that is "qualified" by wood is not wood, but wooden, just as a thing that is qualified by whiteness is not whiteness, but white. The thing is called not by the name of what qualifies it, but by a name derived from the name of what qualifies it. Of course, many Greek quality words, including the word for 'pale' (λευκός), do not have the form of *thaten* (ἐκείνινον) terms; they do not end in -en(-ινον). But Aristotle is not saying that they do.²⁹ The point is that the quality and the qualified object receive distinct names. And this linguistic fact reflects the metaphysical fact that the qualified object is not identical with the quality that qualifies it, and might, for instance, persist, while the quality departs. This is what Aristotle means by saying, "'thaten' is predicated in accordance both with matter and with qualities." Timaeus, by contrast with Aristotle, thinks that being characterized by wood is being wood. Aristotle thinks: sometimes yes and sometimes no. The wood itself is both wooden and (some) wood, but a wooden box is merely wooden.

One is liable to want to object strenuously: "But there are profound differences between qualitative properties and matter!" Indeed there are. For instance, qualities are not substances in any sense, whereas matter is a substance (albeit in an attenuated sense). Material composites come into being *out of* matter, not out of qualities. Furthermore, material composites depend on their matter: a quality might depart, leaving simply a privation, but if the matter departs (without being appropriately replaced), then the composite ceases to be. Moreover, in the language of $\Theta.7$, the matter is the subject of potential being: the wood is potentially a box. Some wood is potentially a wooden substance. Qualities, by contrast, are not the subjects of potential being: whiteness is not potentially a white thing. Aristotle does not deny these important differences. In fact, the term

²⁸ The claim that substances are called after their matter paronomously also occurs at *Physics* VII.3 245b9-12 and *GC* II.1 329a17-21 (both of which are quoted above). But neither of these passages compares material character with qualities. To my knowledge, our passage from $\Theta.7$ is the unique one in which Aristotle draws that comparison.

²⁹ In *Z.7* (1033a16-19), he gives examples with various linguistic forms.

thaten seems even to draw out this tension. It combines the notion of a *that* (a single definite item) and the notion of a quality.

Aristotle wants us, despite these differences, to discern a similarity between the ways in which qualities and matters characterize things. Another formulation for this similarity is: “both [matter and properties] are indefinite [ἀόριστα].” I take this to mean that neither matter nor qualities are a *certain this*. To have a quality is not to be a *certain this*, and to have some matter is not to be a *certain this*. This statement sums up Aristotle’s metaphysics of matter. A *certain this* is a definite individual, such as Socrates or Callias. Some fire is not such a definite individual, on Aristotle’s view, nor is whiteness. The point is not that *being wooden* or *being pale* determines less about an item than does *being a human being*. Rather, *to be wooden* and *to be pale* is not to be any particular determinate thing, whereas *to be a human being is*, for every human being, to be some particular determinate human being. Matter and quality are indefinite in the sense that the relevant mode of being does not involve being some definite particular item.

Readers of the *Categories* are familiar with the dependence of qualities, such as whiteness, on the particulars that instantiate them. Aristotle here makes a similar point about matter. This is a remarkable extension of his earlier view. One would think that, say, a wooden box depends on its wood for its being, and not the other way around. Aristotle accepts this. He also thinks, however, that wood, as matter, is not on its own a *certain this*. For being a *certain this*, it depends on a form. The composite depends on the matter to some extent. Without the matter, it could not have being at all. Nevertheless, it is only in virtue of becoming a box that some wood acquires the definite identity characteristic of a *certain this*, and, indeed, of substances. The identity of the matter derives from the identity of the composite.

Aristotle thus achieves in $\Theta.7$ a crucial part of the conception of matter that he needs. He makes room for the view that wood might undergo a change, such that wood is not what the result of the change is. Wood might become, say, a box, where a box is *what* the product is. There is, of course, a great deal of work left to do. Among other things, we need a way to distinguish composite substances from composite non-substances. And there are many open questions about matter. But we have a crucial piece of his theory firmly in hand. In order to believe in composite things that are genuine substances, one must somehow demote matter in metaphysical significance. The matter of a composite substance is not what the substance really is. Matter thus ends up, Aristotle suggests, having a role

oddly similar to that of qualities. This is odd because matter is a paradigmatic subject: something that *has* properties, not a property that *other* things have. While odd, this proposal is perfectly coherent and intelligible. It is precisely the proposal that wooden boxes, if they are substances, are *merely* wooden, and not wood. Aristotle's ontology of composite substances rests firmly on this adjectival conception of matter, a conception that remains as challenging and viable as it was when Aristotle proposed it.³⁰

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