

Matter in Z3

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What is it to be that out of which something consists? This question is surprisingly difficult to answer. Various attempts have been made that I will sketch only very briefly before discussing one of them in somewhat more detail. First, that out of which a thing consists may be taken to be that out of which it came to be that is still present in the thing, as Aristotle seems to say in *Physics* B3. But this cannot hold true of matter in general, since that out of which a thing consists is not always that out of which it came to be. For instance, all of the matter that constituted Socrates as a baby may have been gradually replaced by other matter, and thus not remained present in him. If matter were defined as that out of which Socrates came to be that is still present in him, he may then turn out to gradually dematerialize. And indeed, Aristotle does not define matter in the passage from *Physics* B3. Rather, he lists matter (ύλη) only as one possible example for what he calls “the cause out of which” (τὸ ἐξ οὗ). Matter *can* be what remains in a thing when it changes, but it need not. For similar reasons, the matter of a thing cannot be whatever endures through all the changes that a thing undergoes. After all, things may also change with regard to their matter, such that the thing endures but its matter does not. Further, matter does not seem to be that which makes the difference between two individuals that have the same form, since the respective parcels of matter, in order to make such a difference, should themselves be different individuals, and thus by assumption consist of further matter. Finally, it will turn out in this talk that the method that Aristotle seems to employ in *Metaphysics* Z3 for isolating the matter of a thing does not yield anything specific. Hence, it does not seem to be the case that matter is what is left over when we take away all form. I will here concentrate on this latter attempt to say, in general, what it is to be matter.

I begin with a brief discussion of the more general aims of Z3. I will ask how we are supposed to take away all form off a thing and will come up with an answer in

linguistic terms: We are supposed to delete the descriptive bits from a noun phrase, leaving only articles and demonstratives in place. The question will then be whether matter can possibly be that which is referred to by a bare article or demonstrative. Further, I will point out a certain similarity between the concept of matter that Aristotle discusses in Z3 and the receptacle of all change that Plato introduces in the *Timaeus*. It will turn out that the discussion in Z3 should be read as a critique of the Platonic notion of a bare, ultimate subject of predication and that this concept is not in fact one that Aristotle could have had any use for.

1. The Pale And the Dead Socrates

Aristotle introduces the idea of stripping away all attributes of a given thing in *Metaphysics* Z3 in order to show that at least in one sense of “substratum,” the essence of a substance cannot be taken to be its substratum: the *material* substratum of things is not their essence.

This is the story, as it is usually told, about why Aristotle raises this issue. The most basic question that we can ask about a thing is what it is; less basic are the questions how it looks and feels, where it is located, how it relates to other things etc. In the *Categories*, an early or at least introductory text, Aristotle had claimed that what-questions are properly answered by reference to substances, and that in the primary sense, substances are the concrete instances of a species, such as Socrates, or a particular horse. But then, in his physical writings, Aristotle came to distinguish between the matter and form of sensible substances. As a result, there seemed to be something more basic out of which Socrates and the particular horse may be said to consist. For clearly, Socrates has once come into being out of some stuff, and as everyone knows, he eventually ceased to be and dead matter was left behind. Coming and ceasing to be are changes, and as Aristotle argues in *Physics* A7, the proper account of any change involves three principles: that which results from the change, that which changed into that which results, and that which makes the difference between them. Consider, for instance, the change by which Socrates turns pale. The pale Socrates is that which results, the not yet pale Socrates with the potential for being pale is that which changes into the pale one, and the latter’s paleness makes the difference. Now what is crucial is that the thing that changed into the pale Socrates must be specifiable without assuming its actual paleness. It must be something that

may or may not be pale. In the case of the pale Socrates this is easy, for we may refer to him by his name, whether he is pale or not.

In *On Generation and Corruption*, Aristotle further distinguishes qualified from unqualified coming to be. In the proper description of a qualified coming to be, the “be” is supplemented by a qualifier. When Socrates comes to be pale, this qualifier is “pale.” Socrates does not simply come to be, period; he only comes to be pale. The same holds true for ceasing to be. If Socrates ceases to be pale, he does not cease to be, period. He ceases to be, period, only when he dies.

Aristotle adds, however, that to a certain extent the distinction between qualified and unqualified coming and ceasing to be concerns only the way in which we talk. For when Socrates ceases to be pale, we can also describe this change as an unqualified ceasing to be: the pale Socrates ceases to be, period. Hence, the question arises whether the death of Socrates can also be described as a case of *qualified* ceasing to be. When the pale Socrates unqualifiedly ceases to be, Socrates ceases to be pale. Now Socrates drinks the hemlock, tells Crito that he owes a cock to Asclepius, and ceases to be, period. But perhaps there is something of which we may properly say that it ceased to be *something* by changing from the living Socrates into the dead Socrates. This something would have undergone a qualified ceasing to be: it ceased to be the living Socrates, but did not cease to be, period. There seems to be something that responds to this description, at least when we narrow down our focus to the immediate time instant when Socrates dies. What may or may not be Socrates is the organic matter that is left behind immediately after his death. But if there is such a parcel of matter that may or may not be Socrates, we should also say that during his lifetime, this matter *was* Socrates. And then it seems that Socrates is not a basic and primary substance. When someone points at Socrates and asks what this is, we should say that it is an ensouled parcel of matter: a heap of organic matter in a certain arrangement such as to be capable of certain movements. But then, it seems, “Socrates” is not the most basic answer to the question what this is. The really basic subject seems to be his matter. If there is any such tension between the *Categories* and the *Physics*, it must have troubled Aristotle in Z3, for here he argues that matter does not qualify as a substance, and that accordingly, the question what a thing is may not be answered by reference to its matter. This is, at least, the common story.

I will argue that there is no real conflict between the picture of (primary)

substances in the *Categories* and the doctrine of matter and form. In both contexts, Aristotle supposes that concrete substances are composite entities with a formal and a material aspect, but he denies that any of these aspects may be considered in isolation. If Aristotle gets his point home, it is indeed misleading to say, pointing at Socrates, that what this is is a parcel of matter in a certain shape. The only correct answer would be that it is a human being: the kind of thing that unqualifiedly ceases to exist when Socrates dies.

2. On Denuding

Although it is interesting to see how Aristotle actually resolves the issue about the material constitution of his primary substances, this is not exactly the question that I have promised to tackle here. My question is, in general, what it is to be the matter of a thing, and in his Z3 argument Aristotle seems to assume that to be the matter of a thing is to be what is left over after the subtraction of all its form. This is, at any rate, what Aristotle appears to imply at the outset of his argument. He writes:

If matter is not a substance, it is hard to see what else could be; for when all else is taken away, nothing appears to remain. (1029a10–12)

He seems to say that matter is what is left over when “all else” is taken away. But it is not advisable to read “all else” as “all else except matter” here. For the statement that matter is left over if everything *other than matter* is removed would not be informative. But since Aristotle has started by assuming that to be a primary substance is to be a subject of possible predication that may not be predicated of anything further, we may safely assume that this is the distinction to employ here. “All else” is all that may be predicated, and matter is supposed to be that which remains when we take everything away that may be predicated of something.

In Z3, Aristotle argues that the primary substances that we should study in metaphysics cannot be the ultimate subjects of predication in this sense. He proceeds, roughly, in three steps. First, he argues that if we strip a physical thing of everything that is said of something else, we end up with matter; in a certain sense of matter. Second, he shows that matter in this sense is neither separable nor a “this such.” Third, since primary substances should be both separable and a “this such,” Aristotle

concludes that matter in the specified sense cannot be the primary substance we were looking for.

Consider again Socrates. How are we supposed to strip him of what may be predicated of him? One way of doing so, of course, may be to kill him. After his death, there is something left over, and this will be his matter. But first, this matter will still have some of the features Socrates had. At least initially, it will have his size, color and smell. Second, the more general context of the argument requires that we go on stripping, until we have reached the ultimate substratum of qualities. But there is no way of physically denuding a thing of all its properties, since it seems that after each step, we will be left with something that has further properties. After all, Aristotle also writes that the absence of a quality would also be a quality. When we imagine a thing that lacks a certain quality, we therefore imagine a thing that has another quality, namely the quality of lacking the first. There is strictly no way of even only imagining a thing without qualities.

Some scholars have suggested that instead of taking away the properties of a thing, we are only supposed to change them, or only to imagine them changed. If we can change the remains of Socrates regarding their shape, color, smell, etc., we will have shown that none of these qualities is essential to them, and since in every one of these changes from one quality to another, something must underlie that may be one or the other, we will have shown that there is something underlying the sum of all the changes that may as well have none of the qualities in question.

But consider how Aristotle describes the change that occurs when one of the elements—fire, air, water, earth—changes into another. He argues that although all elements can change into another, there is no more basic subject that underlies this change. It is true that in all these changes, something must remain the same, but what remains the same is different in each case. For instance, when water changes into air, it remains moist, and when air changes into fire, it remains hot. But at no instant will there be anything that is neither hot nor cold (or neither moist nor dry). This however means that there is no general way of reaching a more basic level by freely varying the attributes of a thing. It would not work for the elements. They have at least a *disjunctive* property: they are necessarily either hot or cold. How are we supposed to “take all else away,” then?

3. τὸδε τι

In the course of his argument in Z3, Aristotle pronounces what sounds like an official definition of what it is to be matter:

I call matter that which is in its own right neither said to be such (τί), nor so many (πόσον), nor anything else by which a thing may be determined. For there is something of which each of these is said (κατηγορεῖται), and which itself has a being different from that of each of the categories—for while others are said of substance, the latter is said of matter—and so the last thing will in its own right be neither such, nor so many, nor anything else at all. (1029a20–3)

This apparent definition is interesting because it does not refer to any actual, physical stripping. Or, more precisely, the stripping does not occur on the side of the thing, but rather on the side of the expression by which we refer to it. Matter, according to what Aristotle says here, is what is not *said* to be a “τί,” nor a “πόσον,” nor anything else by which one may specify what or how something is. Since “τί,” “πόσον” etc. refers the initial segment of the list of categories, we are apparently supposed to take a noun phrase that refers to a given thing and delete all parts from it that would fall under any of the categories. Some noun phrases are, of course, non-starters. If we take “Socrates,” for instance, and take away what would fall under one of the categories, we end up with nothing. But take, for instance, “the philosopher who taught Plato.” To teach is an action, Plato is a primary substance, being a philosopher is a quality, or, perhaps, a passion. What is left is “the ... who ...,” since demonstratives and pronouns do not fall under any of the Aristotelian categories.

This is, I submit, what Aristotle tells us in Z3. The idea is that if we take a noun phrase that refers to a composite substance and delete all terms from it that have any descriptive content, we may be left with a phrase that exclusively refers to the matter: the ultimate subject of which all the descriptive bits may be said. This reading has the considerable advantage that to refer to a thing without mentioning its features is certainly not the same as referring to something that does not have any features. Matter is, on this account, precisely what corresponds to a mere “this” and “that.” The important detail to note is that Aristotle tells us to subtract first the “τί,” and then the other categories, starting with “πόσον.” But whereas “πόσον” is in fact the

expression that Aristotle uses for the category of quantity, “τί” is not the word he uses for the category of primary substance. Rather, he refers to substances by means of the complex expression “τόδε τι.”

Substances such as Socrates or a horse are referred to by “τόδε τι,” composite things that do not possess the same degree of substantial unity are more properly called “τόδε τοιόνδε,” as for instance the bed in the *Parts of Animals* A1. All in all, we may combine these three linguistic devices such that composite substances are denoted by the compound expression “τόδε τι,” and a substance that has a property, such as the pale Socrates, would be canonically referred to as (τόδε + τι) + τοιόνδε. As a mere τόδε τοιόνδε, the bed is not a substance having a property, but only matter having a property.

What does the “τι” refer to? The first category, (primary and secondary) substance, is basic because it is the answer to the question what a thing is. The other categories do not specify what a thing is but rather how a thing looks and feels, how it relates to others, etc. For them, Aristotle uses the general expressions “τοιόνδε” or “πόιον τι.” This difference between what a thing is and how it is is also reflected in the way in which Aristotle introduces the so called *formal cause* in *Physics* B3. He writes: “In another way, the form or the paradigm, that is, the definition of the essence, and its genera, are called causes.” What he introduces here are not the qualitative features of a thing, *how* it is, but its essence: *what* it is. The essence is what one specifies in a definition, and a definition tells us what something is. But what Socrates is, for instance, is not a form, shape, or attribute; and hence, the formal cause is not a form, shape, or attribute. Likewise, a paradigm, such as the paradigm from which the Timaeon demiurge copies the sensible world, is not a mere form or quality, but rather its prototypical instance. Formal causes are paradigms or prototypes. As Aristotle remarks in *Z7*, the form in this sense is that in accordance with which something comes to be; that is, it sets the standards of perfection that apply to such a thing. The formal cause is that with a view to which a thing may be judged to be a complete and typical instance of its kind; and in this sense, it is what the thing is supposed to be. For instance, when we call something a beaver, we suppose that there are criteria according to which that living being may be said to be healthy, deformed, atypical, or okay. These paradigms are concrete, if idealized, animals. They are not forms but rather prototypical formed compounds.

“Τι,” as part of the “τόδε τι,” refers to the formal cause in this sense: the paradigm or prototype that tells us what a thing is, not only how it looks and feels. And to say what a thing is, is to specify and describe its paradigmatic formal cause, which in turn is to say what it would be for it to be a good or bad exemplar of its kind.

Let us return to the passage from Z3. We see now that the argument of Z3 does not in any way refer to the analysis of change in the *Physics*, but rather to the structure of the expression “τόδε τι” that Aristotle already uses in the *Categories*. What he calls matter here is not the underlying subject of a change, but that which one part of the expression “τόδε τι” might be taken to refer to when considered in isolation. Given that the canonical way of referring to composite substances is by the composite expression “τόδε τι,” it is a straightforward move to assume that one of the elements of this expression refers to the form of the substance and the other one to its bearer.

Take a reference to Socrates, of the general form “(τόδε + τι) + τοιόνδε,” for instance “this pale, snubnosed man sitting over there,” and denude it. Stripping it will proceed in two steps. First we take away the words that specify how Socrates looks and feels, such that the only words left are “this ... man ...” Now, Aristotle seems to argue in Z3, since an expression like “this man” refers to a τόδε τι, we may as well go on and take away the “τι” (“man”) such that only the “τόδε” (“this”) is left. This, since it is left at last and cannot be further stripped away, should be the ultimate subject of predication.

4. The *Timaeus*

In this context it is important to see that the concept of matter as that which may or should be referred to by a mere τόδε is not Aristotle’s own concept of matter. In the end of Z3, Aristotle argues that if there were matter left after denuding a thing to a bare τόδε, this matter would indeed be the primary subject of predication. But, he claims, there is nothing left. A bare τόδε does not refer to anything, not even to matter. Plainly, he has not clarified his own notion of matter by demonstrating its absurdity.

The idea of matter as a bare τόδε ultimately underlying all predication may be traced back to Plato’s *Timaeus*, although Plato does not use the word “matter” (ὕλη). This is the relevant passage:

Rather, the safest course by far is to propose that we speak about these things in the following way: what we invariably observe becoming different at different times, such as fire, we should in any case not call this (τοῦτο) but in each case [we should call] that which is such (τὸ τοιοῦτον) fire, nor should we call this but always [call] what is such water. Nor should we ever call it something other of all the things at which we point and use the expressions “that” (τόδε) and “this” (τοῦτο) and so think we are designating something, as though it has some stability. For it gets away without abiding the charge of “that” and “this,” or any other expression that indicts them of being stable. It is in fact safest not to refer to them by any of these expressions. Rather, what is such, coming around like what it was, again and again, that is the thing to call thus in each and every case. So it is safest to call that which is in each case such and such “fire,” and so with everything that has becoming. But that in which they each appear to keep coming to be and from which they subsequently perish, that is the only thing to refer to by means of the expressions “that” and “this.” A thing that is some “such” or other, however, hot or white, say, or any one of the opposites, and all things constituted by these, should be not called any of these [i.e. “this” and “that”]. (49D-E)

Given that fire incessantly changes into something that is not fire, Timaeus advises us not to assume that fire really is *what* the thing we are referring to is. Rather, that which really is fire is, properly speaking, something more basic that may have or not have the property of being fiery. Further, this underlying subject is what we should take to be the referent of the demonstratives “τοῦτο” and “τόδε.”

In telling us not to call the changing manifestation “fire,” what Timaeus recommends is only that we should keep in mind that fire is not the name of a property, but the name of something that has certain properties. In a world that constantly changes, Timaeus advises us not to use *descriptive* terms in order to refer to individuals, but only non-descriptive terms like indexicals, individual constants, and variables. In modern terms, we should refer to fire not by a descriptive term “F,” but rather by the complex expression “x such that Fx”; we should formalize the sentence “fire is hot” not as “F is H,” but rather as “for all x: if x is F, then x is H.”

This is what Timaeus means when he says that we should think of fire as “what is such”: we should think of it as “the x that is F.” And he adds that when we do so, that which is such is the receptacle. For the receptacle “turns watery and fiery, and receives the character of earth and air” (52D). But the variable “x” functions as a demonstrative by which we refer to that which is now fiery but may cease to be fiery.

Timaeus, in recommending ways of describing the precosmos, and Aristotle, in discussing the argument from Z3, consider the same issue. Timaeus tells us that the demonstratives “τοῦτο” and “τόδε” do not really refer to concrete things such as fire. Rather, they only refer to that which is such, namely the x that has the property of being fiery. Likewise, Aristotle suggests that by removing first the attributes (τοιόνδε) and then the paradigmatic form (τί) from a referring expression, we might end up with a bare “τόδε” that would refer to the basic subject of predication. In fact, both discuss the very idea of predicate logic. Timaeus seems to advocate it, at least for the precosmos, whereas Aristotle attacks it.

What Aristotle wants to show in Z3 is that the underlying subject of predication as Timaeus has it in mind does not qualify as a substance. If we take Timaeus’ suggestion to the extreme, and this is what Aristotle tries to do by deleting all descriptive words from noun phrases, we do not end up with a substance, but only with a bare τόδε. And, as Aristotle says in the concluding section of the argument:

For those who adopt this point of view, matter turns out to be substance. But this is impossible, since substances seem to be most of all separate and a τόδε τι, and for this reason the form and the compound would seem to be substance more than matter is. (1029a26–30)

That the bare “τόδε,” allegedly referring to what is such, does not refer to a τόδε τι follows immediately. After all, we have taken the “τι” away, and so cannot use it any longer in order to refer to a τόδε τι. We still need to understand why the bare “τόδε” does not refer to anything that would be separate.

5. Separability

What does it mean to be separate? Given our linguistic interpretation of denuding, the most obvious way to make sense of separability is the following:

“τόδε” does not refer to anything separate because “τόδε,” when separated, does not refer. Aristotle thus tells us that we cannot refer to a substance by a word that requires a supplemental “τι” in order to refer. His view is that “τόδε” refers to a substance only in combination, only as part of “τόδε τι.” As he puts it, matter is not *actually* a τόδε τι; but only potentially (1042a27–28). I take this to mean that matter is that about a thing to which a “τόδε” refers only potentially, namely when it is combined with a “τι.” Without a “τι,” “τόδε” does not actually refer to anything, but given the possibility of adding a “τι,” we may say that it potentially refers to the thing; and more specifically, to the material aspect of the thing.

The concept of matter that Aristotle introduces in Z3 by stripping a noun phrase of its descriptive content thus derives from Plato’s notion of the underlying receptacle of all becoming, which is also thought to be denoted by a bare “τόδε.” Plato recommends dividing our references to sensible things into references by means of a bare τόδε and descriptive predicates that are attached to them, much in the same way in which the atomic formulae of predicate logic are complex (Fx). When Aristotle denies that matter, in the sense of what is referred to by a bare τόδε, is substance, he rejects the ontological implications of this move. A bare τόδε cannot be a substance because it is not composite, not a τόδε τι, and not separable from such a composite. It cannot be the ultimate subject of all predication for the same reason. Whereas it is true that in some sense, we may say of Socrates’ matter that it is Socrates, since it is potentially Socrates, we do not thereby predicate a property of his matter.

The Aristotelian alternative to Plato’s underlying bare particular is the τόδε τι; and by using this phrase, Aristotle acknowledges already in the *Categories* that substances are composite entities that should be referred to as “what is this particular one and also of that general type.” Hence, in contrast to the usual story about Z3, the distinction between matter and form that Aristotle discusses there already appears in the *Categories* and is not something that began to trouble Aristotle only in his *Physics* and *Metaphysics*. It is not the distinction between two separable entities, but a distinction between two aspects that correspond to the parts of the canonical term for substances, the “this” and the “such.”