

# Aristotelian Matter Unified\*

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## 1. Introduction

What is the *matter* of a (sublunary) substance? Aristotle seems to give two answers. The first is that a substance’s matter is the substrate (ὑποκείμενον) of its generation: the hunk of gold that is molded into a statue or the menstrual fluid that is worked up into a living human embryo.<sup>1</sup>

For I say that matter is just this—the primary substrate of each thing, from which it comes to be, and which persists in the result, not accidentally. (*Phys.* A9.192a31–2)

Matter, in the most proper sense of the term, is to be identified with the substrate which is receptive of generation and destruction. (*GC* A5.320a2–3)

Now natural generations are the generations of those things which come to be by nature; and that out of which they come to be is

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<sup>1</sup>Aristotle countenances matter in two kinds of entities that do not admit of generation or destruction: superlunary substances (like the stars) have “locational matter” (ὕλη τοπική, *Met.* H1.1042b5–6), and mathematical objects have “intelligible matter” (ὕλη νοητή, *Met.* Z10.1036a9–12). The conceptual problems I address in this paper arise only for the matter of sublunary substances, so I ignore these other kinds of matter throughout.

what we call matter. . . (*Met.* Z7.1032a16–17)<sup>2</sup>

But Aristotle also characterizes the matter of a substance in another way: as the subject (*ὑποκείμενον*) of which its form is predicated: the gold shaped into the statue or the body that possesses the capacities constituting the human soul.

We say that substance is one kind of what is, and that in several senses: in the sense of matter or that which in itself is not a this, and in the sense of form or essence, which is that precisely in virtue of which a thing is called a this, and thirdly in the sense of that which is compounded of both. . . . the body is the subject or matter, not what is attributed to it. Hence the soul must be a substance in the sense of the form of a natural body having life potentially within it. (*De An.* B1.412a6–21)

About two of these we have spoken; about the essence and about the subject, of which we have said that it underlies (*ὑπόκειται*) in two senses, either being a “this”—which is the way in which an animal underlies its attributes—or as the matter underlies the complete reality. (*Met.* Z13.1038b3–7)

. . . when. . . the predicate is a form or a “this,” the ultimate subject is matter and material substance. (*Met.* Θ7.1049a27–36)

It’s the same Greek word—*ὑποκείμενον*—but not, by our lights, the same idea: hence the tendency of translators to prefer “subject” in some contexts, “substrate” in others.

It appears, then, that Aristotelian matter is supposed to play two distinct roles: substrate of substantial change and subject of which form is predicated. But it is notoriously hard to see how any one thing can possibly play both these roles. The problem isn’t obvious if we confine our attention to the “toy” case with which Aristotle often illustrates matter: the gold being molded into a statue. In that case, we can easily identify a single thing—a particular quantity of gold—that is *both* the preexisting substrate of the statue’s generation *and* the subject of which the statue’s form or shape is predicated. But on Aristotle’s view, statues are only *analogous* to real substances (*Met.* H2.1043a4–5, H3.1043b21–3), and the reshaping of gold is,

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<sup>2</sup>Translations throughout this paper are light revisions of the Revised Oxford Translation (Barnes ed. 1984).

strictly speaking, a *nonsubstantial* change (*GC* A4.319b14–15). As soon as we turn to the primary cases of substantial change—that is, the generation and destruction of *organisms*—it becomes difficult to identify *anything* that can serve as both the preexisting substrate and the matter of which the form is predicated. I am quite certain, for instance, that my body contains no menstrual fluid: yet that is what Aristotle often identifies as the preexisting substrate or matter for the generation of a human being (*Met.* H6.1044a34–5, Λ6.1071b29–31, *GA* A19.727b31–3, A20.729a9–11, B4.740b24–5).<sup>3</sup> There does not appear to *be* anything that can play *both* the roles Aristotle assigns to matter. Indeed, there are deep theoretical reasons for thinking that nothing in Aristotle’s system *can* play both roles.

The conclusion many commentators have drawn is that Aristotle really has *two* concepts of matter, each defined in terms of *one* of these roles. Call this position *bifurcationism*. In this paper, I am going to argue on both textual and philosophical grounds that bifurcationism is untenable. I will then sketch a way of thinking about Aristotelian matter that allows it to play both roles. That is, I will argue for a *unitary* conception of Aristotelian matter.

## 2. The case for bifurcationism

The case for bifurcationism consists in two powerful arguments for the claim that no single thing could play both the functional roles Aristotle assigns to “matter.” The first argument appeals to Aristotle’s distinction between substantial change and mere alteration, the second to Aristotle’s claim that the matter of living creatures is essentially ensouled.

### 2A. Substantial change and mere alteration

It is important for Aristotle—indeed, it is part and parcel of his essentialism—that there be a firm and non-interest-relative distinction between the *generation* or *destruction* of a substance and a mere *alteration*. He articulates this distinction in *On Generation and Corruption* A4:

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<sup>3</sup>But compare *Phys.* A7.190b3–5, where the *seed* is said to be the preexisting substrate from which plants and animals come to be. (In the case of humans, the seed (*sperma*) is the semen, not the menstrual fluid.)

... there is alteration when the substrate is perceptible and persists, but changes in its own properties, the properties in question being either contraries or intermediates. The body, e.g., although persisting as the same body, is now healthy and now ill; and the bronze is now spherical and at another time angular, and yet remains the same bronze. But when nothing perceptible persists in its identity as a substrate, and the thing changes as a whole (when e.g. the seed as a whole is converted into blood, or water into air, or air as a whole into water), such an occurrence is a generation of one substance and a destruction of the other... (319b10–17)

On this account, the formation of a statue out of a lump of bronze is not really a substantial change, but merely an alteration in an accidental property of the bronze (its shape). Aristotle’s examples of statues and so forth are meant to be *analogies* to help one understand cases of *genuine* substantial change (*Met.* H2.1043a4–5, *Phys.* A7.191a7–12). In a genuine substantial change, *nothing*—or, at least, nothing perceptible—*persists*. So it seems that the preexisting substrate could not possibly be the subject of which the form of the generated substance is predicated. (Strictly speaking, of course, the *GC* account of substantial change only forbids a *perceptible* persisting substrate. Keep that in mind for later. Note, however, that whenever Aristotle *says* what the matter of a substance is, it’s always something perceptible: menstrual fluid, flesh and bones, the organic body.)

## 2B. Essentially enformed matter

In some passages, Aristotle identifies the subject of which a human being’s form (or *soul*) is predicated as the “organic” body (*Met.* Z11.1037a6).<sup>4</sup> In other passages, he points to the body’s uniform tissues, flesh and bones (Z11.1036b4–6). It doesn’t much matter, because Aristotle seems to hold that neither of these can exist when not enformed by soul. When the body and its tissues and organs are no longer enformed by soul, they are body, organs, and tissues only homonymously (*Meteor.* Δ12.390a10–15, *GA* A19.726b21–3,

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<sup>4</sup>It is often assumed that by “organic” Aristotle means “having organs,” but Stephen Everson 1997 has shown that ὀργανικόν always has the sense “instrumental” elsewhere and should probably be taken in the same sense here. Cf. *De An.* B4.415b18–19, where Aristotle describes the natural bodies of plants and animals as “organs” (instruments) of soul, and *GA* A1.716a25.

B1.734b24–7, *PA* A1.640b34–641a5, *DA* B1.412b18–22, *Met.* Z10.1035b23–5). That is, they have only a *name* in common with the living body, organs, and tissues, not a *definition* (*Cat.* 1.1a1–3). So the body and its tissues, which Aristotle names as the subject of which the human being’s form is predicated, cannot possibly exist before the human being itself (or at least the nascent human being, the embryo) and therefore cannot play the role of substrate of the human being’s generation. (This problem was pointed out forcefully by Ackrill 1972/3 and is often called “Ackrill’s problem.”)

## 2C. Constitutive and preexisting matter

In the teeth of these arguments, many commentators have concluded that there simply isn’t anything in Aristotle’s ontology that can play *both* the roles he assigns to matter, and that accordingly Aristotle’s word “matter” has two quite different senses, which we can disambiguate as *constitutive matter* and *preexisting matter*.<sup>5</sup> Constitutive matter is the subject of which form is predicated: for instance, the living body or the flesh and bones. Preexisting matter is the preexisting substrate of substantial change: for instance, the menstrual fluid. The arguments just canvassed appear to show that the constitutive matter of a genuine substance must be distinct from its preexisting matter.

## 3. Two problems with bifurcationism

Persuasive as these arguments are, I don’t think that bifurcationism is tenable as a reading of Aristotle. There are two serious problems with it, which I will detail in this section. Then, in section 4, I will present a unitarian view of matter and show where the arguments for bifurcationism go wrong.

### 3A. Aristotle doesn’t make the distinction

The first problem is that Aristotle doesn’t explicitly make the distinction between constitutive and preexisting matter anywhere in the corpus. Since Aristotle is not one to leave it as an exercise to the reader to figure out that something is “said in many ways,” the bifurcationist must take him to have

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<sup>5</sup>See Kosman 1987:362, 378, Charlton 1970:73–7, Jones 1974:495, 500 n. 22, Gill 1989, Lewis 1991:256–8, Dancy 1973:698. The precise terminology varies.

conflated the two notions of matter in his own thinking, or at least never to have clearly distinguished them.

### Proximate and remote matter

Aristotle does make some distinctions that might be thought to line up with the distinction between constitutive and preexisting matter. One is the distinction between *remote* and *proximate* matter (*Met.* H4.1044a15–25, b1–3, Δ6.1016a19–24, Δ24.1023a25–29, Θ7.1049a21–7; cf. H6.1045b17–20, Λ3.1070a20).<sup>6</sup> The relation “*x* is the remote matter of *y*” is just the *ancestral* of the relation “*x* is the proximate matter of *y*”; that is, the former is to the latter as “*x* is the ancestor of *y*” is to “*x* is the parent of *y*.” Thus, for example, the sweet is the remote matter of phlegm, because it is the proximate matter of fat, which is in turn the proximate matter of phlegm (H4.1044a20–22). Presumably, the elements (earth, air, fire, and water) are the remote matter of a living organism (cf. *PA* B1), and the elements, at least, can preexist the organism. Moreover, it is clear from Aristotle’s discussion of form-matter predication at *Met.* H6.1045b17–19 that the *constitutive* matter, of which form is predicated, must be *proximate* matter. Might we then identify the organism’s *preexisting* matter (the substrate for its generation) with its *remote* matter? This would give textual legitimacy to the posited distinction between preexisting and constitutive matter.

Tempting as it is, this approach won’t work. The preexisting matter for an *F* must be *potentially* an *F* (*GC* A3.317b16–18, *Met.* Λ2.1069b15–20). But on Aristotle’s view, it is only the *proximate* matter of an *F*, and not the remote matter, that is potentially an *F*. For example, it is *bronze*, the proximate matter of a statue, that is potentially the statue. *Earth*, the remote matter of a statue, is only potentially *bronze*—not potentially a statue (*Met.* Θ7.1049a17–18). So the preexisting matter cannot be identified with the remote matter.

In support of this point, note that there are two plausible candidates for the proximate matter of a human being: the menstrual fluid or *καταμήνια*, which Aristotle names as the preexisting substrate of generation, and the human body, which he names as the matter of which the human form is predicated. Both of these are potentially human beings (*GA* B1.734b35–6,

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<sup>6</sup>The terms “proximate” and “remote” are Irwin’s (1988:241). Aristotle uses a variety of words for “proximate” matter: ἴδιον (H4.1044b3), οἰκεία (H4.1044a18), ἐσχάτη (H6.1045b18), and τελευταία (Λ3.1070a20).

B4.740b19–20, *DA B1*), so neither can be remote matter. So the distinction between proximate and remote matter is simply orthogonal to the bifurcationist’s distinction between preexisting and constitutive matter.

### **Substrate as matter and substrate as matter + privation**

Alternatively, we might try to find the distinction between preexisting and constitutive matter in Aristotle’s observation that the substrate of substantial change is “one in number, but two in form” (*Phys.* A7.190b23–5). On the one hand, the substrate is the *unshaped bronze*, which does not persist when the bronze becomes shaped; on the other hand, it is the bronze which persists in the statue. Might we identify the constitutive matter with the bronze and the preexisting matter with the *unshaped bronze*, that is, the bronze + the privation of statue-shape?

No. The proposal seems plausible in the artifactual case, but breaks down when we consider the generation of genuine substances. On this proposal, the menstrual fluid—the preexisting matter of a human being—would have to be the human’s constitutive matter as qualified by the privation of soul. But the constitutive matter of a human is the organic body, or perhaps the flesh and bones (that’s what gets the bifurcationist ball rolling in the first place). And Aristotle is quite explicit that these cannot exist at all qualified by the privation of soul (§2B, above). So the distinction between substrate as matter and substrate as matter + privation doesn’t seem to match up with the bifurcationist’s distinction, either.

### **Was Aristotle confused?**

It appears, then, that the bifurcationist is invoking a distinction that appears nowhere in the actual Aristotelian text. Anyone who has spent much time reading Aristotle will agree that it is exceedingly unlikely that he had the distinction in mind but just did not bother to make it explicit. So the bifurcationist is committed to saying that Aristotle failed to grasp a distinction to which he is committed by his own theory, and as a result has no resources for avoiding equivocation in his talk about matter.

To get an idea of just how uncharitable this reading would be, consider Aristotle’s argument for the substantiality of matter in *Metaphysics* H1.1042a32-b3. Though the details are puzzling, the form of the argument seems to be something like this:

All substrate is substance.  
Matter is substrate in substantial changes.  
Matter is substance.

The bifurcationist will have to say that this argument equivocates. For “substrate” in the second premise must mean “substrate of change.” But if we read “substrate” in the first premise that way, then we must say that Aristotle has never given us any argument for this premise.<sup>7</sup> On the other hand, if we read “substrate” in the first premise as “(ultimate) substrate of predication,” then the first premise is just the familiar “ultimate substrate” criterion for substance that Aristotle first proposes in the *Categories* and reiterates at several points in the *Metaphysics* ( $\Delta$ 8.1017b13–14, Z3.1028b36–1029a2, Z13.1038b15). The obvious conclusion is that Aristotle is *conflating* “substrate of substantial change” with “substrate (subject) of predication,” relying on the latter reading for the plausibility of his major premise, the former for the plausibility of his minor premise.

It is not impossible that Aristotle *was* confused in this way. But we ought to favor a more charitable interpretation, if one can be found.<sup>8</sup>

### 3B. The substrate for substantial change persists

On the bifurcationist account, there is no *persisting* matter in substantial change. The preexisting matter (for instance, the menstrual blood) is destroyed or “used up,” and the constitutive matter (for instance, the organic body) comes into being. Indeed, the bifurcation is motivated, in large part, by Aristotle’s claim in *GC* A4 that when something perceptible persists as

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<sup>7</sup>So complains Bostock 1994:252. It is possible that Aristotle is here relying on his claim in *Cat.* 5.4a10–b4 that “It seems most distinctive of substance that what is numerically one and the same is able to receive contraries.” But if this is the argument, it is not one we have been prepared for by anything in *Z*.

<sup>8</sup>Perhaps the bifurcationist could offer the following alternative reading of the argument. The first premise, “all substrate is substance,” implies both “all potential substrates are potentially substance” and “all actual substrates are actually substance.” The second premise can be read “the pre-existing matter in a substantial change is potentially substrate (to the form).” Then it can be validly concluded that “the pre-existing matter in a substantial change is potentially substance.” Since “is” for Aristotle can have the sense of either potential or actual being (compare the two readings of “is a jogger”), this conclusion is one possible meaning of “matter is substance.” Moreover, it comports well with Aristotle’s conclusion at the beginning of H2 that matter is the substance that exists potentially. (I am indebted here to conversations with Alan Code.)



substrate, the change is a mere alteration, not a genuine substantial change (§2A, above).

### Recalcitrant texts

A serious problem with this view is that Aristotle claims explicitly that the substrate of substantial generation *persists* in the generated substance. Aristotle's definition of matter in the *Physics* is "... the primary substrate of each thing, from which it comes to be, and which is present in it (ἐνυπάρχοντος), not accidentally" (A9.192a31–2). And lest it be thought that the *Physics* definition reflects an earlier and more primitive conception of matter, there are these passages from the *Metaphysics*:

Therefore, as we say, it is impossible that anything should be produced if there were nothing before. Obviously then some part of the result will preexist of necessity; for the matter is a part; for this is present in the thing (ἐνυπάρχει)<sup>9</sup> and it is this that becomes something. (Z7.1032b30–1033a1)

... there must be something underlying which changes into the contrary state; for the *contraries* do not change. Further, something persists (ὑπομένει), but the contrary does not persist; there is, then, some third thing besides the contraries, viz. the matter. (Λ1,2.1069b6–9)

All of these passages clearly state that the preexisting matter persists in a substantial change.

It is open to the bifurcationist to claim that the passages asserting the persistence of matter do not express Aristotle's considered view. Mary Louise Gill holds, for instance, that the model of substantial change presented in the *Physics* and book Z of the *Metaphysics* is replaced by a new model in *Metaphysics* H6 and Θ7.<sup>10</sup> But given that Aristotle does not explicitly draw the distinction between preexisting and constitutive matter—not even in the texts that are supposed to present his mature view—our justification for

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<sup>9</sup>Here I depart slightly from Ross, who renders ἐνυπάρχει "is present in the process." Note that the same verb is used in the passage from *Phys.* A9 just quoted.

<sup>10</sup>Gill 1989:6–11. Gill is neutral about whether the presence of these two models of change in the *Metaphysics* reflects an actual change in Aristotle's thinking or a dialectical strategy.

invoking the distinction can only be its usefulness in making sense of Aristotle's text. So throwing away texts to save the distinction is like throwing away an election in order to raise more funds for the campaign. Each text that is inconsistent with the distinction weakens the case for attributing it to Aristotle in the first place.<sup>11</sup>

### Trifurcation?

Gill has proposed patching up the bifurcationist account by finding in Aristotle a *third* kind of matter, "generic matter," which *does* persist through substantial change, but "only as a set of properties that modify the higher construct" (1989:164). Because generic matter survives only as property, not as substrate or subject, it does not threaten to make substantial change look like a mere alteration of the material substrate: "... the lower matter is not a definite subject to which the functions belong but instead a set of properties accidental to the higher object..." (167). Jennifer Whiting has offered a similar account of the persisting matter, with similar motivation (1992:84).

But these maneuvers don't really solve the fundamental problems facing bifurcationism. One *still* needs to explain away texts in which matter is said to persist *as substrate* or *subject* (hence not property) and as *substance* (hence not accident)—for instance, *Metaphysics* H1:

But clearly matter also is substance; for in all the opposite changes that occur there is something which underlies the changes, e.g. in respect of place that which is now here and again elsewhere, and in respect of increase that which is now of one size and again less or greater, and in respect of alteration that which is now healthy and again diseased; and similarly in respect of substance there is something that is now being generated and again being destroyed, and now underlies the process as a "this" (ὑποκείμενον ὡς τόδε τι) and again underlies it in respect of a privation of positive character (ὑποκείμενον ὡς κατὰ στέρησιν). (1042a32-b3)

On Gill's view, this text reflects the more primitive model of substantial change Aristotle aims to replace. But it is only her commitment to bifurcationism that makes this model look primitive. Apart from this commitment,

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<sup>11</sup>Still, Gill's approach might be justified if it were the only way of attributing a philosophically satisfactory position to Aristotle. I will argue below that it is not.

there are no reasons to separate Aristotle's remarks about matter into "primitive" and "mature." Bifurcationism presents itself as a way of making sense of the texts—there is, I remind you, no *direct* evidence for the distinction between preexisting and constitutive matter in Aristotle—but it is curiously selective about which texts it takes seriously.

Moreover, the evidence for taking matter to be a property rather than a subject is weak. In *Metaphysics*  $\Theta$ 7, Aristotle acknowledges some *similarities* between matter and accidental properties: both are "indefinite" ( $\acute{\alpha}\delta\omicron\rho\iota\sigma\tau\alpha$ ), neither is "separate," and concrete individuals are called "wooden," not "wood," as if the matter were a property. But he quite clearly states in the very same passage that matter is the *subject* of which *form* is predicated (1049a34-b2).<sup>12</sup> Whiting 1992 notes that if A and B are both accidents of C, A can be said to be an accident of B in a derivative sense (as *pale* might be said to be an accident of *the musical thing* rather than of *Socrates*, *Met.*  $\Gamma$ 4.1007b2–5). In this sense, earth (which on Whiting's view is the persisting matter in human generation) might be a subject for soul, insofar as the human body (of which soul is predicated) is earthen (84). But I find it hard to believe that Aristotle is using "subject" in this derivative sense in the fundamental metaphysical discussions of H1 and  $\Theta$ 7.

### Persisting matter and hylomorphism

Textual issues aside, there is a further problem facing any view on which the constitutive matter of a substance (the subject of which its form is predicated) does not preexist and persist through the substance's generation. Why is the constitutive matter, so conceived, needed at all? What explanatory role does it play? It is easy to lose track of this question if one gets bogged down in the project of making what Aristotle says about matter consistent. But we must do more as interpreters than make Aristotle's claims consistent; we must try to make sense of them as elements of a sensible philosophical position. That means that we must try to understand Aristotle's *motivation* for taking individual organisms to be hylomorphic composites in the first place.

If we look at the passages from *Physics* A7–9 in which Aristotle first introduces form and matter, we can see a clear motivation for taking individuals to be hylomorphic composites. In order to make sense of substantial

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<sup>12</sup>See Kung 1978.

generation—against the Eleatic challenge that it would amount to creation *ex nihilo*—Aristotle posits a *persisting* substrate.<sup>13</sup> Given this account of change, it is easy to see why a concrete individual substance must be analyzed as a compound of two *independent* principles, a persisting material substrate and a form that comes to be predicated of it. But if, as the bifurcationists believe, Aristotle later came to reject the idea that there is a *persisting* substrate in substantial change, *this* reason for seeing individuals as hylomorphic composites would no longer have been available to him. Why, then, did he hang on to the idea? Michael Loux puts the point well:

A driving force behind the theory of *ousia* in the middle books is the idea that, in the case of things that come to be and pass away, the ontological principles in terms of which we characterize their coming to be are principles that enter into our metaphysical analysis of those things once they have come to be. . . . If we sever the tie between the idea of a subject for change and the idea of that which persists through change, not only do we have recalcitrant texts. . . on our hands; we also undermine the assumption that justifies the central insight of the middle books. There is little left to support the contention that familiar particulars are matter-form composites if the subject for their coming to be need not persist as subject for the appropriate form. (1991:248–9)

It is clear that the notion of constitutive matter can do some *exegetical* work for Aristotle scholars, but what *philosophical work* could it do for Aristotle? And how satisfying is an exegesis that leaves Aristotle without a clear motivation for his hylomorphism?

Perhaps there is a satisfactory answer to the question “why constitutive matter?” that is consistent with the bifurcationists’ view that constitutive matter does not persist through substantial change. For example, it might be argued that Aristotle needs hylomorphism in order to carry out the project of investigating “the causes, principles, and elements of substances” (*Met.* H1.1042a5–6). For as Aristotle points out in Z17, it is meaningless to ask “why is a thing itself?”; we only get a question that admits of an interesting

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<sup>13</sup>Charlton 1970:77, Jones 1974, and Cohen 1984:186 have argued that the substrate in *Physics* A does not persist. I think that their position is refuted by an unambiguous text, *Physics* A9.192a31–2, quoted above. Jones argues, implausibly, that ἐνυπάρχοντος at 192a32 does not imply persistence (499–500). For further argument that the material substrate of *Physics* A persists, see Code 1976b, Graham 1984, and Gill 1989:ch. 3.

explanatory answer when we ask, “why the matter is some individual thing, e.g. why are these [materials] a house?” (1041b5–6). However, it isn’t clear to me that the question “why is this *constitutive* matter some individual thing?” is very interesting at all when constitutive matter is conceived as *essentially* ensouled, hence *essentially* “some individual thing.” The question is interesting only when the matter has a greater degree of conceptual independence from the thing it constitutes than the bifurcationist grants to constitutive matter.

To sum up, then: there are two main problems for the bifurcationist approach. First, the putative distinction between preexisting and constitutive matter appears nowhere in Aristotle’s writings. Second, the bifurcationist approach cannot accommodate Aristotle’s repeated claim that the substrate of substantial generation *persists* in the product, and persists as subject—a claim that seems essential to *motivating* Aristotle’s hylomorphism. All of this suggests that we ought to seek a unitarian account of Aristotelian matter. Standing in the way, however, are the two arguments for bifurcationism we rehearsed earlier. Is there any escape from this *aporia*?<sup>14</sup>

## 4. How to think about Aristotelian matter

In this section, I will sketch a unitarian approach to Aristotelian matter and show why the arguments for bifurcation fail when matter is properly understood.

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<sup>14</sup>Freeland 1987 has argued that *blood* is the persisting matter of an animal, on the grounds that (a) the material substrate for the generation of an animal is menstrual fluid, and (b) blood is the matter out of which the animal’s body is made (*PA* B4.651a14). But blood is surely not that of which the animal’s form is predicated. Nor does blood really *persist*: although there is blood in the fully grown animal, it is not the *same* blood as the mother’s menstrual fluid. That blood has been *used up*—*made into* the the animal’s tissues—and no longer exists, even as a material constituent of the tissues that might be recovered if the tissues were broken down. (Aristotle says that the matter of the homoimerous tissues is the elements—earth, air, fire, and water—not blood, *PA* B1.646a13–24). On Aristotle’s view, blood is not properly speaking an “actual material part” of the animal’s body, as Freeland claims (401). Rather, it is a “residue,” the final form of the concoction of food, and therefore not a *part* of the body at all (*PA* B3.650a34–b12,  $\Delta$ 4.678a6–10, *GA* 724b24–31).

## 4A. Criteria of adequacy

For the sake of concreteness, let's consider the matter for a particular kind of substance—say, a dog. The unitarian is committed to finding a single entity that can play both the roles Aristotle assigns to the matter of a dog: substrate of the dog's substantial generation and subject of which the dog's form (its soul) is predicated.<sup>15</sup> In order to play the first role, we have seen, the matter of a dog must

- (C1) exist prior to the dog's generation,
- (C2) be potentially a dog, and
- (C3) persist through the dog's generation,
- (C4) but not as a perceptible substrate that changes.

In order to play the second role, the matter of a dog must

- (C5) be the subject of which the dog's form (soul) is predicated.

The bifurcationists urge that these criteria are not jointly satisfiable by any single entity in Aristotle's ontology. I am going to argue that they are wrong about this. There *is* something that can satisfy all five criteria. Indeed, it has always been right in front of our eyes in the Aristotelian text, though certain prejudices have kept us from seeing it.

## 4B. Matter as potential substance

What is it, then? A potential dog. Not a quantity of menstrual blood that is potentially a dog, but a bona fide particular, a *potential dog* that is now “one in number” with some menstrual fluid and later “one in number” with the living dog's body. Aristotle's ontology, I will argue, includes not only actual substances, but *potential substances*—not to be reduced to actual substances and their properties—and it is these that can play both the roles he assigns to matter. The persisting substrate is a single *potential dog* to which first

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<sup>15</sup>Aristotle does not demand that one and the same thing be substrate for both the dog's generation and its destruction. The existence of a persisting substrate for *each* substantial change suffices to block Parmenidean worries about creation *ex nihilo* and destruction *in nihilum*. Since (as we will see below) Aristotle holds that every destruction of an F is the generation of a G, it suffices to discuss generation.

the menstrual fluid, then the embryo, and finally the living dog successively bear the relation of “oneness in number”:

$$\begin{array}{ccccc}
 \text{menstrual fluid} & \Rightarrow & \text{growing embryo} & \Rightarrow & \text{living dog} \\
 =_{num} \text{ at } t_0 & & =_{num} \text{ at } t_1 & & =_{num} \text{ at } t_2 \\
 \text{this potential dog} & \Rightarrow & \text{this potential dog} & \Rightarrow & \text{this potential dog}
 \end{array}$$

Warning: Aristotle’s relation of “oneness in number” is not the same as *our* “numerical identity.” Unlike genuine identity, oneness in number is time-relative, so the fact that the same potential dog is one in number with some menstrual blood at  $t_0$  and one in number with a living dog at  $t_2$  does not imply that the menstrual fluid and the living dog are (ever) one in number. I will have more to say about Aristotle’s notion of “oneness in number” in section 4D, below.

It should be clear that a particular *potential dog*, if Aristotle countenances such an entity, satisfies all five criteria of adequacy we laid down above for the matter of a dog. It exists prior to the dog’s generation, in the form of menstrual fluid (C1). It is (trivially) potentially a dog (C2). It persists through the dog’s generation (C3), yet not as a *perceptible* substrate (C4). For one can *see* a potential substance only accidentally, by seeing an actuality (or a part of an actuality) with which the potential substance is “one in number.” One can see the menstrual fluid and the living dog, but one does not see the potential dog *per se*, as it has no essential perceptible properties. Finally, the potential dog can be the subject of which the dog’s form (soul) is predicated (C5). As we have seen, Aristotle is explicit that the animal’s form or actuality is predicated of that which is potentially the animal.

It should also be clear how this proposal blocks the two arguments for bifurcationism. The first argument (from the distinction between substantial change and mere alteration) is blocked because the potential dog does not have any perceptible qualities *per se*. It persists as a substrate that changes, but not as a *perceptible* substrate that changes. So the generation of a dog can count as a genuine substantial change, not a mere alteration. The second argument (from essentially ensouled matter) is blocked because the putatively “essentially ensouled matter”—the living dog’s body—is not identical with, but only “one in number” with the matter of the dog. Properly speaking, the dog’s matter is a *potential dog*, which is not essentially ensouled and indeed once existed without soul (when it was “one in number” with some menstrual fluid).

The claim that the matter of an *F* is a *potential F* is abundantly supported by the texts. Aristotle is explicit in *Physics* A9 that the persisting matter in substantial change is a potentiality:

The matter comes to be and ceases to be in one sense, while in another it does not. As that which contains the privation, it ceases to be in its own nature; for what ceases to be—the privation—is contained within it. But as potentiality (ὡς δὲ κατὰ δύναμιν) it does not cease to be in its own nature, but is necessarily outside the sphere of becoming and ceasing to be (ἄφθαρτον καὶ ἀγένητον).<sup>16</sup> (192a25–9)

In *Metaphysics* H1, echoing *De Anima* B1.412a6–9, Aristotle defines matter as “that which is not a ‘this’ actually but a ‘this’ potentially” (1042a27–8), and at the beginning of H2, he reiterates that matter is “substance potentially” (1042b9–10). In H6, as we have seen, he says that the proximate matter of a thing is potentially that which its form is actually (1045b19–20). In Θ6–7, Aristotle clarifies the way in which matter can be understood as potentiality and explains when specific potentialities can be said to exist. In Λ5, he characterizes the matter of a substance as a potential being capable of becoming qualified by both form and privation (1071a10–11). Finally, in N1 Aristotle says that the matter of a substance must be “potentially that sort of thing” (1088b1–2).

Given all this evidence, it seems quite plausible to solve the puzzles that lead to bifurcationism by saying that the matter of a dog is a *potential dog*—a *potential substance* that persists in its identity through substantial change.

#### 4C. Pure potentialities

One reason that this solution has not been proposed before is that commentators have been slow to see that there is room for “pure potentialities” in

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<sup>16</sup>Aristotle is not claiming here that potentialities are *eternal*. They plainly are not: a potential house does not exist until the wood has been cut and stacked, and it no longer exists when the planks have decayed and fallen apart (*Met.* Θ7; Frede 1994:188–93). Similarly, a potential dog does not exist before the production of the menstrual fluid or after the dog’s death. Aristotle’s claim is rather that these potentialities exist (at some times) and do not exist (at others) without ever being generated or destroyed (he explains why at *Phys.* A9.192a29–34 and *Met.* Λ3.1069b35–6). In this respect matter resembles form (Z15.1039b24–6; Ross 1924, 1033b5–6 *ad loc.*) and geometrical points (H5.1044b21–2).



Aristotle's system *above the level of prime matter*. Prime matter, as traditionally conceived, is *in itself* nothing actually: it is nothing but a potentiality.<sup>17</sup> But it has always been assumed that higher forms of matter have an actual character as well as a potentiality. Earth, for instance, is *in itself* (and actually) dry, though potentially flesh.

What I am urging is that properly speaking, *all* matter is pure potentiality: not an indeterminate potentiality (as prime matter was thought to be), but a fully *determinate* potentiality, e.g., a potential dog. That is, the matter of a substance is not some actual stuff (say, earth or flesh or an organic body) that is potentially a substance: it is a *potential substance* with its own conditions of identity and persistence. Although it may be “one in number” with some actual stuff with *per se* properties, the matter itself, as pure determinate potential substance, is not *anything per se* (*Met.* Z3.1029a20–1).

It follows that when Aristotle names earth or flesh or some other perceptible stuff as the matter of a substance, he is really pointing to a particular potential substance with which this earth or flesh is “one in number.” This explains why Aristotle specifies the matter for a human being in so many different ways: sometimes as menstrual fluid (*Met.* H4.1044a35), sometimes as the seed or embryo (Θ7.1049a14–18, *Phys.* A7.190b5), sometimes as flesh and bones (*Met.* Z11.1036b4–6), sometimes as the living body (Z11.1037a6). He is not, as the bifurcationists would have it, specifying one kind of matter here, another kind there. Rather, he is picking out a single potential substance by specifying different actual substances (or parts of actual substances) with which it is “one in number” (at different times). Nonaccidental specifications of the matter—as “this potential F”—are useful only in the most abstract discussions. Moreover, such specifications require a specialized metaphysical vocabulary that gets clarified only in *Metaphysics* Θ. In less rarified discussions, Aristotle contents himself with specifications of matter that are more familiar “to us.”

### Inflated ontology?

It might be objected that this view saddles Aristotle with an incredibly inflated ontology: one that contains imperceptible potential houses as well as actual bricks, potential dogs as well as actual menstrual fluid, potential portions of earth as well as actual mortal animals. This ontology is not required

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<sup>17</sup>Traditionally, it is potentially everything, but (in view of *Met.* Θ7) this cannot be right: at most it is potentially the four elements.

in order to make sense of claims such as “these bricks are potentially a house”: we can construe these claims innocently enough as predicating capacities of *actual* substances, or of parts or heaps of substances. On this reading, to talk of a “potential dog” is not to talk about a peculiar kind of substance, but rather to talk about certain capacities of some actual material. Jonathan Barnes takes this line in a survey article on Aristotle’s metaphysics:

... it is plain that powers or capacities are accidents rather than substances: for there to be a power is simply for something to be able to do something; there is a capacity to  $\Phi$  just insofar as something, some substance, is capable of  $\Phi$ -ing . . . . Thus stuffs are accidents. For bronze to exist is for certain substances to be brazen; that is to say, it is for certain substances to have certain powers or capacities. . . (1995:94).

But whatever virtues *we* might see in such a reductive account, *Aristotle* is plainly committed to potential substances, and not just to actual substances that have, among their accidental properties, capacities to become other substances (or to be the substances they are). Aristotle’s division of being into actual and potential is orthogonal to his division of being into the categories, so that there are actual and potential beings in every category: “Some things exist only actually, some potentially, some potentially and actually—some as beings [i.e., substances],<sup>18</sup> some as quantities, others in the other categories” (*Met.* K9.1065b5–7; cf.  $\Theta$ 10.1051a34–b1,  $\Theta$ 1.1045b32–5, E2.1026a33–b2). To say that the only substances are *actual* ones, and that talk of potential substances is just disguised talk of certain properties of actual substances, is to read Aristotle through a modern lens. He has no reason not to “inflate his ontology” with potential substances. As there are two ways of being (*Met.*  $\Lambda$ 2.1069b15), potential and actual, there are correspondingly two kinds of beings in each category (cf.  $\Theta$ 3.1047b1–2).<sup>19</sup>

<sup>18</sup>Jaeger inserts τὸδε τι (from the parallel passage at *Phys.*  $\Gamma$ 3.200b27)—“some as being a ‘this’”—but as Ross’s note *ad loc.* indicates, ὅν by itself can indicate being in the category of substance.

<sup>19</sup>I am indebted here to Frede 1994 and to Myles Burnyeat. On the question of whether potential substance is substance, see Morrison 1985:153, n. 52 and Frede and Patzig 1988:2:51.

## Separate potentialities?

Still, one might be uneasy with the idea that the substrate for the generation of an *F* is a persisting *potential F*—even if one accepts that (on Aristotle’s view) there *are* such things as potential substances. For Aristotle holds that potential substances, like accidental properties, are *inseparate* (ἀχώριστα): that is, that they depend for their being on actual substances. And it might be thought that in order to persist in their identity through substantial generation, the putative *potential dogs* would have to be *separate*—both from the actual dogs they become and from the portions of menstrual fluid with which they are initially “one in number”—and that this is ruled out by Aristotle’s claim that potential substances are not separate.

To see why this objection is misplaced, we need to see what the inseparateness of potential substances amounts to. It is different from the inseparateness of accidents. Accidents are inseparate from actual substances because the substances are their *substrates* (subjects). But potential substances are *themselves* the substrates of which forms are predicated, so they cannot be inseparate in the same way. Fortunately, Aristotle tells us explicitly what it is for potential substances to be inseparate, in *On Generation and Corruption* A5. In every instance of substantial generation, he says, “. . . the matter is inseparate, for the reason that (ὡς οὔσων) it is one in number [sc. with some actual substance that preexists the change], but not one in account” (320b13–14; cf. *Phys.* A7.190a14–15, 191a2). A potential substance is inseparate because it must at all times be *one in number* with some actual substance (though perhaps with different actual substances at different times). Take, for example, a potential dog. It is now one in number with a quantity of menstrual fluid and later one in number with a living dog.<sup>20</sup> It is inseparate because it cannot exist without being one in number with *some* actual substance, but it is not essentially dependent on any *one* actual substance. In this way Aristotle gives potential substances the independence they need to play the role of substrates for substantial change, yet avoids the outcome he regards as monstrous: the existence of purely indeterminate potentialities that float free of actuality altogether (*GC* A3.317b27–30).

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<sup>20</sup>This explains why, on Aristotle’s view, the generation of one thing is always the destruction of another (*GC* A3.319a21–2). Whenever the form of an *F* comes to be predicated of a potential *F* in the generation of an *F*, the actual *G* with which the potential *F* was formerly “one in number” is destroyed. For instance, the generation of the actual dog is the same process as the destruction of the actual menstrual fluid.

#### 4D. Oneness in number

I have suggested that prior to the generation of a dog, the potential dog is “one in number” with the menstrual fluid from which the dog is generated. This should be uncontroversial, once we accept that the persisting substrate of the dog’s generation is the potential dog. For in both the *Physics* and *On Generation and Corruption*, Aristotle states clearly that the substrate from which a thing is generated is one in number, but two in form or account (*Phys.* A7.190b23–5, *GC* A5.320b13–14). As usual, Aristotle illustrates his point by discussing the production of an artifact, leaving it for us to extend the analogy to cases of genuine substantial change. In the artifactual case, the “two things” that are one in number are (i) some actual stuff (e.g., gold) and (ii) that actual stuff with a certain accidental predicate (unshaped gold). The former functions as the genuine persisting substrate of generation, while the latter perishes in the production of the artifact. Accordingly, in the case of genuine substantial generation, the “two things” that are one in number must be (i) a potential substance (e.g., a potential dog) and (ii) an actual substance (the menstrual fluid). Again, the former is the persisting substrate, while the latter perishes in the substantial change.

#### Oneness in number and identity

Such talk is apt to seem incoherent to contemporary ears. Surely, it will be said, when we say that “two things” are one in number, this is only a manner of speaking, since, after all, what we are saying is that there is only one thing, not two. It’s just that the thing can be *described* in two different ways: either as *the gold* (say) or as *the unshaped gold*. But if we think about “oneness in number” in this way, we can make no sense of the claim that the menstrual fluid is one in number with a persisting potential dog. For now it looks as if there really *are* two distinct substances, with different persistence conditions, not a single substance that can be described in two ways. There is an actual substance, the menstrual fluid, which perishes in the generation of the dog, and there is a potential substance, the potential dog, which persists through that generation. In what sense can these be “one in number”?

I suggest that in order to understand Aristotle here, we need to step outside of the comfortable logical and semantic framework of late twentieth-century analytic philosophy. It is true that the model we naturally use to understand Aristotle’s claim that the gold and the unshaped gold are one in

number does not help us make sense of the claim that the potential dog and the menstrual blood are one in number. But that is because it is the wrong model. When Aristotle claims that the gold and the unshaped gold are one in number, he really is asserting a relation between *two* things: one a substantial stuff, the other an accidental unity, or (to use Gareth Matthews' memorable coinage) "kooky entity."<sup>21</sup> We must be cautious in stating the thesis this way: it is not as if Aristotle thinks that the gold and the unshaped gold are distinct things without qualification. They are, after all, one in number.<sup>22</sup> The point is rather that Aristotle does not *have* our notion of (absolute) identity. Instead, he deploys a whole host of "sameness" and "oneness" relations. Things can be the same (or one) accidentally (*κατὰ συμβεβηχός*) or in their own right (*καθ' αὐτὰ*); they can be the same in number, in species, in genus, or by analogy; they can be the same in the way that a potentiality and its actuality are the same.<sup>23</sup>

We will get Aristotle wrong if we interpret his relation of "oneness in number" as *our* numerical identity.<sup>24</sup> To see why, notice that Aristotle needs

- (1) The gold is one in number with the unshaped gold.

to be consistent with

- (2) The gold, but not the unshaped gold, can survive being shaped into a statue.

But how could it be, if what (1) says is that "the gold" and "the unshaped gold" pick out a single object? How could that single object both survive

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<sup>21</sup>Here I have been much influenced by Code 1976a, Matthews 1982, and Lewis 1991.

<sup>22</sup>See Matthews 1982: "So Socrates and Socrates seated . . . are only in a sense the same (people). Yet they are not two people, nor, indeed, two of anything else. There is not even, according to Aristotle, a univocal sense of the verb 'to be' in which they can both be said to be" (226). Cf. *Top.* E4.133b31–3: "For constructive purposes, however, you should say that the subject of an accident is not different without qualification (*ἕτερον ἄπλωδες*) from the accident taken along with its subject . . ."

<sup>23</sup>See *Top.* A7, *Met.* Δ6, Δ9, Η6, Ι3.

<sup>24</sup>In *Top.* A7, Aristotle describes cases of sameness in number as "cases where there is more than one name but only one thing (*πρᾶγμα*)" (103a9–10) and says that when we use an accidental feature to pick out a person (e.g., "the sitting man"), we "[suppose] ourselves to be indicating the same object (*τὸν*) by its name and by its accident" (103a38–9). But "one" and "the same" here mean "one in number" and "the same in number," so one cannot use these passages to show that Aristotle takes the gold and the unshaped gold to be one object in *our* (strict) sense.

and not survive being shaped into a statue? The problem is a familiar one, and our tradition has found at least two ways to deal with it:

- (a) Restrict intersubstitution of coreferential terms to “extensional contexts”: contexts not in the scope of modal, temporal, intentional, or quotational operators. Since “——— can survive being shaped into a statue” is not an extensional context, (1) and (2) can both be true.<sup>25</sup>
- (b) Allow coreferential terms to be intersubstituted in modal and temporal contexts, but deny that “the gold” and “the unshaped gold” are referential terms at all. Rather, they function semantically as *quantifiers* (“there is exactly one thing that is gold and unshaped, and it ...”). Since “the gold” and “the unshaped gold” are not referential terms, they are *a fortiori* not coreferential, so (1) does not license any substitutions in (2).<sup>26</sup>

But these are *our* solutions. *Aristotle* does not distinguish between extensional and nonextensional contexts, or between proper names and descriptions. So he does not have any of the resources we would deploy to show how (1) can be consistent with (2).<sup>27</sup> His way with the problem is different: he takes “the gold” and “the unshaped gold” to be referring terms, but instead of restricting substitutivity of identicals to certain special contexts, he distinguishes between stricter and looser senses of identity. “One in number” in (1) does not express identity in the strictest sense, the sense that licenses universal intersubstitutivity.

If the claim that *A* and *B* are one in number is consistent with their being, in a certain sense, two distinct things, then there is nothing *incoherent* about the claim that a potential dog and some menstrual fluid can be one in number. Indeed, the way is open to accepting all of these claims:

- (a) The potential dog is a pure potentiality that persists through the generation of the dog.
- (b) The menstrual fluid is an actual substance that perishes in the generation of the dog.

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<sup>25</sup>See Quine 1963, Code 1976a:§III.

<sup>26</sup>See Neale 1990:ch. 4, Smullyan 1948, Code 1976a:§IV.

<sup>27</sup>Code 1976a ingeniously but tenuously connects the first solution with Parmenides and the second with the curious philosophers reported in *Phys.* A2.185b25–186a3. On his view, Aristotle *did* have the resources for these two solutions, and even considered them, but rejected them.

- (c) The dog is an actual substance that exists only after its generation.
- (d) The potential dog and the menstrual fluid are one in number (prior to the generation of the dog).
- (e) The potential dog and the dog are one in number (after the generation of the dog).

### Rough edges

Every interpretation has its rough edges. The primary difficulty facing the present proposal is that Aristotle's fullest discussion of oneness in number (in *Metaphysics*  $\Delta 6$ ) does not seem to allow that a potential dog *could* be one in number with some menstrual fluid.

There are two problems. First, Aristotle says that whatever is one in number is one in species (1016b35–6), and also that things are called one in number when their matter is one (1016b33). However, the menstrual fluid and the potential dog are not one in species: the potential dog, but not the menstrual blood, has the essence of a *dog*, and hence belongs to the species *dog*.<sup>28</sup> Nor do the menstrual fluid and the potential dog share the same matter: on the present account, the matter of the menstrual fluid is some potential menstrual blood, while the potential dog does not have matter, since it is not generated (see note 16, above). If we stick to the letter of  $\Delta 6$ , then, it appears that the menstrual fluid and the potential dog cannot be one in number.

It might be possible to evade this difficulty by taking the claims at 1016b33–6 to be restricted to *intrinsic* ( $\chi\alpha\theta'$   $\acute{\alpha}\upsilon\tau\omicron$ ), as opposed to *accidental* oneness in number. Aristotle discusses accidental oneness at 1015b16–36. At 1015b36 he signals the beginning of a discussion of  $\chi\alpha\theta'$   $\acute{\alpha}\upsilon\tau\omicron$  oneness, but it is not clear where that discussion ends. If (as seems plausible) it ends at 1016b17, then the observations at 1016b33–6 are meant to apply to all oneness, not just  $\chi\alpha\theta'$   $\acute{\alpha}\upsilon\tau\omicron$  oneness. But if 1016b33–6 are part of the discussion of specifically  $\chi\alpha\theta'$   $\acute{\alpha}\upsilon\tau\omicron$  oneness, then we might be able to evade the first problem by noting that the putative oneness in number between the menstrual fluid and the potential dog would be *accidental*, not  $\chi\alpha\theta'$   $\acute{\alpha}\upsilon\tau\omicron$ . That things that are one in number *accidentally* need not be the same in species

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<sup>28</sup>Cf. *Met.* H6.1045a31–3, where Aristotle says that the potential sphere and the actual sphere have the same essence.

is suggested by *Metaphysics* I3, where Aristotle distinguishes between sameness “in number” and sameness “in account *and* in number” (1054a33–5). If sameness in number always implied sameness in species, then this distinction would be pointless.<sup>29</sup>

Even if we can solve the first problem in this way, however, there remains a second problem: Aristotle’s schema for accidental oneness in number (1015b16–27) does not seem to have any *room* for oneness in number between an actual substance and a potential substance. Aristotle says that *A* and *B* are one in number if

1. there is a substance *C* such that *A* and *B* are accidents *C* (e.g., the musical [thing] and the just [thing]); or
2. *A* is a substance and *B* is an accident of *A*, or vice versa (e.g., the musical [thing] and Coriscus); or
3. *A* is a substance and one of the parts of the formula of *B* is an accident of *A*, or vice versa (e.g., the musical Coriscus and Coriscus); or
4. there is a substance *C* such that one of the parts of the formula of *A* and one of the parts of the formula of *B* are accidents of *C* (e.g., the musical Coriscus and the just Coriscus).

But (1) there is no substance of which the menstrual fluid and the potential dog are both accidents (what would it be, if not the menstrual fluid or the potential dog?). (2) Nor, it seems, is the menstrual fluid an accident of the potential dog. If it were, the potential dog would look like the kind of separate pure potentiality ruled out in §4C, above. “This menstrual fluid” would designate a mere accidental unity, not a substance; so there would be no actual substance with which the potential dog was one in number, and the potential dog would be “free floating” in just the way Aristotle excludes in *On Generation and Corruption*. Nor, conversely, should we say that the potential dog is an accident of the menstrual fluid. For Aristotle needs the potential dog to be a *persisting substrate* of generation, and it could not be if it were merely an accident of the menstrual fluid, or an accidental unity. (Even if the unshaped gold and the finished statue were both shiny, *the shiny*

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<sup>29</sup>However, this passage also implies that sameness in number implies sameness in matter: “. . . we call a thing the same if it is one both in formula and in number, e.g. you are one with yourself both in form and in matter” (1054a33–5).



could not be said to be a persisting substrate of the production of the statue.) (3) Nor are any of the *parts* of the formula of the potential dog accidents of the menstrual fluid, or vice versa. (4) Nor, finally, is there a third substance of which *parts* of the formulas of the potential dog and the menstrual fluid are accidents. The problem, in sum, is that “potential dog” and “menstrual blood” are both substance terms, so it is hard to see (in the terms of  $\Delta 6$ ) what could sustain a relation of accidental sameness between them.

I am inclined to think that Aristotle simply wasn’t thinking of the relations between actual and potential substances when he wrote  $\Delta 6$ . Such a lapse would not be uncharacteristic of Aristotle: he gives us precious few hints about how to deploy his logical concepts (for example, the accidental) in relation to hylomorphic composites. I think we should put more weight on his commitments, in *Physics* A7 and A9, to the idea that the substrate of generation is “one in number, but two in form,” and to the idea that the persisting substrate is a potentiality, than on the discussion of oneness in number in  $\Delta$ , which is after all a catalogue of usage and not a sustained theoretical discussion. At any rate, if we have to explain away some texts, it seems preferable to suppose that the discussion of  $\Delta 6$  is incomplete than to explain away the much more central passages in which Aristotle says that the matter persists through substantial change, as the bifurcationists must.

## 5. Conclusion

We’ve covered a lot of ground, so let me recapitulate. We began with the observation that matter in Aristotle has two jobs: it is both the substrate for substantial change (generation and destruction) and the subject of which form is predicated in a hylomorphic composite. We then considered two arguments to the effect that no one thing can play both roles in Aristotle’s system: the argument from the distinction between substantial change and mere alteration, and the argument from essentially ensouled matter. If these arguments are cogent, then we seem to have no choice but to acknowledge that every substance has *two* distinct matters: its *preexisting matter*, which serves as substrate for substantial change, and its *constitutive matter*, which serves as the subject of which form is predicated. But this position is intolerable as a reading of Aristotle. First, it is implausible that Aristotle, the king of fine distinctions, would fail to alert his reader to a distinction that is central to his metaphysics, and almost as implausible that he would fail to

see the need for the distinction. And second, he explicitly commits himself to the persistence of the preexisting matter in the hylomorphic composite. (Indeed, this commitment is arguably the fundamental motivation for the analysis of individuals as hylomorphic composites.)

There must, then, be something wrong with the arguments for bifurcationism. Both arguments can be defused, I have suggested, if we think of matter primarily as *potential substance*. The matter of a dog, I have argued, is in the first instance a particular *potential dog*, which is “one in number” at one time with a portion of menstrual fluid and at a later time with a living dog’s organic body. The argument from the distinction between substantial change and mere alteration is defused because the persisting matter, *this potential dog*, is not a perceptible substrate that changes in its properties. The argument from essentially ensouled matter is defused because *this potential dog* is not essentially ensouled. It was not ensouled, for instance, when it was “one in number” with some menstrual fluid. When Aristotle names the organic body or flesh and bones as the matter of an animal, he is picking out a potential substance by pointing to an actuality to which it is (for now) “one in number.”

The main difficulties for this account lie in specifying the *relation* between the persisting potential substances and actual substances. I have suggested that Aristotle’s claim that potential substances are not *separate* from actual ones amounts to the claim that any given potential substance must at every moment be “one in number” with *some* actual substance (or heap of substances). This understanding of inseparateness accords potential substances the independence they need to serve as persisting substrates for substantial change.

A full defense of the account of Aristotelian matter I have proposed would need to go far beyond the programmatic remarks I have been able to offer here. It would need to engage in detailed exegesis of the central texts: *Physics* A7–9, *On Generation and Corruption* A3–5, *Metaphysics* Z3, Z7–9, H1–6, Θ 6–7, and Λ1–5, to name only the most important. It would need to show how Aristotle’s theory of the elements fits with his fundamental account of matter as potential substance, and it would need to weigh in on the contentious issue of prime matter.<sup>30</sup> It would need to consider the matter for *growth* as well

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<sup>30</sup>For arguments against prime matter in Aristotle, see King 1956, Charlton 1970 (appendix), Gill 1989 (appendix). In support of prime matter in Aristotle, see Solmsen 1958, Robinson 1974, and Williams 1982 (appendix). Although nothing in this paper turns on the issue, I believe that the account of matter I advance here significantly bolsters the

as the matter for substantial generation. Finally, it would need to take into account Aristotle's explanatory use of matter in his scientific works: not just his programmatic remarks about material causation, but his account of homoiomerous substances in *Meteorology*  $\Delta$  and his material explanations of the features of animals in *On Parts of Animals*.

My aim in this paper has been more limited: I have sought only to remove some conceptual blinders and open up some logical space. Seeing our way to a unitarian account of matter has required us to step outside of our familiar and strongly entrenched ways of thinking at least twice: first, in seeing that Aristotle countenances pure persisting potential substances; second, in seeing that Aristotle's relation of oneness in number is quite different from our numerical identity. No wonder, then, that so many commentators have been driven to an unsatisfactory bifurcationism, or to accusing Aristotle of fundamental conceptual blunders.

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case for the opposition, by providing satisfactory prime matter-less readings of the passages that appear to commit Aristotle to prime matter. For example, some interpreters have taken the infamous "stripping off" thought experiment of *Metaphysics* Z3 to show that Aristotle *did* think that prime matter is the subject of which form is predicated (e.g., Kung 1978:151, Robinson 1974:183–7). I *agree* with these interpreters (against Charlton 1970 and Gill 1989) that Aristotle is talking about his own concept of matter when he says: "By matter I mean that which in itself is neither a particular thing nor of a certain quantity nor assigned to any other of the categories by which being is determined" (1029a20–1). But I disagree that only prime matter fits this description. The specific potentialities I discuss in §4B, above, fit the description also, because they are not *in themselves* actually anything.

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