HYLOMORPHISM IN ARISTOTLE’S METAPHYSICS: CONSTITUENT ONTOLOGY WITHOUT DERIVATIVE DIVERSIFICATION

A Dissertation

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by

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Abstract

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What, according to Aristotle, accounts for the fact that two co-specific organisms, composed of matter and form, are distinct from each other? Is their difference accounted for by the difference of their matter or of their form, or in some other way? My introduction clarifies important terminological and philosophical ambiguities surrounding this question and contextualizes the argument of my dissertation. My first chapter explores the two mainstream views on this question, both of which claim that the diversity of co-specific organisms is derivative (either from the diversity of their matter or from the diversity of their form), arguing 1) that both mainstream views are committed to what we might call a constituent ontological vision of hylomorphism (according to which matter and form are non-identical components of organisms) and 2) that there are considerable advantages to viewing Aristotle's hylomorphism as a constituent ontology, perhaps most notably for defending the coherence of generation and corruption. My second chapter, however, argues against each of the mainstream views, pointing out conflicts with key points of Aristotle's metaphysics. My third chapter introduces my thesis that diversity is underived and defends it by appeal to Aristotle's metaontology and
his nonreductivist vision of organisms (in a way that, at the same time, cuts equally against both mainstream views). My fourth chapter argues that we need not throw away constituent ontology along with the mainstream views; rather, we can maintain both the thesis that diversity for co-specific organisms is underived and a constituent ontological understanding of hylomorphism. I outline a constituent ontological interpretation of hylomorphism which maintains that the diversity of organisms is underived. A constituent ontological understanding of organisms does not, as some have argued, in itself undermine the irreducible unity of organisms; rather, is only when constituent ontology is coupled with one of the mainstream views on diversification that unity is undermined. Finally, my fifth chapter argues that the version of hylomorphism articulated in my fifth chapter is compatible with both 1) the claim that an organism's body includes a plurality of distinct parcels of matter within it, and 2) the claim that an organism's matter pre-exists and persists after the life of that organism. I explore key claims of Aristotle's about the nature of matter's unity to support these claims. By advocating a constituent ontological hylomorphism that does not see the diversity of the organism as derived from the diversity of one of its constituents, we can maintain both these two advantages associated with the traditional view on diversification and the irreducible unity of organisms.
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INTRODUCTION:

DIVERSIFICATION IN ARISTOTLE’S METAPHYSICS

In virtue of what is a given member of a species numerically distinct from another member of that species? The question of what diversifies members of the same species has a long and vexed history in Aristotelian scholarship. It is a metaphysical question to be distinguished from its epistemological counterpart, the question of how we know that a given member of a species is numerically distinct from another, so that we can, as P.F. Strawson puts it, identify distinct particulars.¹ Traditionally, the answer to this metaphysical question has been that for Aristotle, it is in virtue of having numerically distinct matter that such individuals are numerically distinct.² This traditional answer has been paraphrased time and again as the claim that matter is the principle of individuation. But, as G.E.M. Anscombe and P.T. Geach point out, that same phrase is often used to refer not to what makes one individual distinct from another, but to what makes each a genuine unity, a genuine individual, in the first place.³ To avoid this ambiguity, I will use “diversification” to refer to the first issue and “unification” to refer to the second. The


² This view, with various modifications, enjoyed widespread popularity throughout the Middle Ages, and still has a large contemporary following.

question of what unifies a given member of a species is the question of what makes it a
genuine unity, a genuine individual as opposed to, say, a mere heap or a stuff; it is a
question that seems especially pressing under certain interpretations of Aristotle’s
doctrine of hylomorphism. But it is distinct from the question of what diversifies such
individuals.

There are two mainstream views concerning Aristotle’s principle of
diversification. The traditional view, the view that matter is the principle of
diversification, has a long and distinguished history. According to this view, the diversity
of co-specific organisms derives from the diversity of their matter. St. Thomas Aquinas
maintains a version of this view by distinguishing between designated matter (matter
considered under determinate dimensions) and undesignated matter. Whereas the latter is
included in the definition of human being, and so is in a sense common to all human
beings, the former is distinct in different human beings, so that “we would include it in
Socrates’ definition if Socrates had a definition.” Avicenna⁷ and Averroes⁸ before

⁴ Some argue that if we understand this doctrine as claiming that organisms are ontological
composites of matter and form, then this question of how they can count as genuine unities rears its head. However, I will argue in chapter 5 that viewing organisms as ontological composites of matter and form is not sufficient for calling their unity into question.

⁵ Of course, it may turn out that whatever serves as the principle of unification also serves as the
principle of diversification—it may turn out that the two questions have the same answer. Perhaps the fact
that one principle might coherently fulfill both roles, along with some version of a parsimony principle, is
responsible for the fact that these two questions have so often been conflated. It may be that there is even
intuitive support for thinking that one principle fulfills both roles; Peter King, in “The Problem of
Individuation in the Middle Ages,” Theoria 66 (2000), pp. 159-184, writes, concerning medieval debates
about this problem, that “the answers were generally taken to be linked: whatever makes Socrates what he
is also makes him different from other humans” (p. 160).

⁶ St. Thomas Aquinas, On Being and Essence II, trans. Armand A. Maurer (Toronto: Pontifical
Institute of Mediaeval Studies, 1949), p. 32.

⁷ See Avicenna, Psychology 5.3.
Thomas likewise maintained some version of the view that matter is the principle of diversification. This view has also had a number of contemporary adherents. Proponents of the view differ as to whether the matter that diversifies organisms is diverse in its own right, or whether it in turn derives its diversity from some other source (such as diversity of place). But although they differ as to whether matter is diversified in its own right, they all agree that co-specific organisms are diversified by their matter.

The text at the foundation of the traditional view is found at the end of Metaphysics VII.8, where Aristotle says not only that the matter of distinct co-specific organisms is distinct, but indeed that distinct co-specific organisms are distinct *dia* their matter. Proponents of the traditional view interpret *dia* here as meaning "in virtue of," as Barnes also translates it: “And when we have the whole, such and such a form in this flesh and in these bones, this is Callias or Socrates; and they are different in virtue of their matter (for that is different), but the same in form; for their form is indivisible” (1034a5-8). In addition, proponents of the traditional view usually maintain, based on this text and other motivations, that co-specific organisms do not have distinct forms, so that form cannot serve as the principle of diversification. In fact, a common philosophical argument for the view that assumes this thesis about form is laid out by one of its proponents, Theodore Scalsas, in the following way:

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When substances are of the same kind, their difference must rest on something other than the form, namely, matter. This is a general, a priori argument that is not restricted in application to physical matter, but would apply to any kind of matter. The argument is that if there are substances that are of the same kind, because they differ from one another, they must each consist of more than the form of that kind. Otherwise, they would not differ from each other.\textsuperscript{11}

Scaltsas goes on to conclude that "Generally, the Aristotelian position is that matter, whatever it may be, differentiates substances of the same kind."\textsuperscript{12}

The second mainstream view, the view that form is the principle of diversification, has become increasingly popular among commentators. Proponents of this view maintain that co-specific organisms derive their diversity from the diversity of their forms, and they agree that forms are diverse in their own right. Commentators such as Jennifer Whiting, Michael Frede, Charlotte Witt, and Michael Wedin maintain this view. Motivated by the notion of matter as an indeterminate stuff rather than as something in its own right divided into numerically distinct parcels, these commentators see form as more fit than matter to serve as the source of diversity for organisms of the same species. As Whiting puts it,

This matter has to make up one thing before it can be the same as (or different from) another individual at a time. …This priority of unity threatens the view that matter is the principle of individuation; if form is the principle of unity, and if individuation presupposes unity, then individuation presupposes form. This suggests that only informed matter can individuate and thus that form is at least a necessary condition for individuation.\textsuperscript{13}


\textsuperscript{12} Ibid.

These two mainstream views may at first glance seem to be on opposite ends of the spectrum, but it is important to see that a common understanding of Aristotle’s hylomorphism lies at the core of both views. According to Aristotle’s hylomorphism, organisms include matter and form. But what is the relationship between matter, form, and composite? In chapter one, I will argue that proponents of both mainstream views must agree that matter and form are identical neither to each other nor to the organism which they constitute. Both mainstream views, therefore, are founded upon what we might call, to borrow a contemporary term, a constituent ontological interpretation of Aristotle’s hylomorphism—an interpretation according to which organisms are composites of non-identical components. A constituent ontological understanding of hylomorphism has many advantages which I will explore in chapter one. A key point of this dissertation will be that although the mainstream views are committed to a constituent ontology, the implication does not go in the reverse direction: seeing Aristotle's hylomorphism as a constituent ontology need not imply that matter or form is the principle of diversification for organisms.

In addition to assuming that matter and form are non-identical components of organisms, both mainstream views also agree that if an organism $x$ is distinct from an organism $y$, then $x$ and $y$ must have either distinct matter or distinct forms. The traditional view then maintains that matter but not form meets this condition of being distinct in distinct co-specific organisms. The view that form is the principle of

\[14\] Constituent ontology in general, along with the constituent ontological interpretation of hylomorphism, will be discussed in detail in chapter one.

\[15\] At least, most proponents of the traditional view maintain that form is not distinct between distinct organisms. Thomas Aquinas, however, maintains that form is distinct, just not in its own right:
diversification maintains that although both form and matter meet this condition, matter is first made into a distinct individual by the action of the form; hence the diversity of forms is prior to the diversity of matter. Finally, both views conclude that the diversity of co-specific organisms derives from the diversity of the constituent which they see as meeting this condition—either matter or form.

But why take this last step? How does the fact that matter or form must be distinct in distinct organisms justify the stronger conclusion that one of these is the principle of diversification for organisms, that organisms are distinct because of their distinct matter or form? Even if distinctness of matter or of form is both necessary and sufficient for the distinctness of organisms, it does not follow that the diversity of their matter or form is what accounts for the diversity of organisms. That is, according to the traditional view, to say that two organisms differ numerically because they have different matter is to say not merely that the difference in their matter is necessary and sufficient for their difference; it is to say that the difference in their matter is explanatory (again, in a metaphysical sense) of their difference.

In other words, we have no reason to conclude, from the fact that the diversity of one of these items is both independent of the other's diversity and is necessary and sufficient for the diversity of an organism from other organisms, that that item is the principle of diversification for organisms. There are other possibilities here: for one thing, it may be that organisms are diverse in their own right; and it may even be, not only that organisms are diverse in their own right, but that it is the diversity of organisms

“matter is the principle by which forms are individualized” (Aquinas, *On Being and Essence* II, p. 32). He therefore maintains the traditional view despite his claim that distinct individuals also have distinct forms.
that serves as the principle of diversification for one or both of the *components* of organisms, rather than the other way around. Why are these other, perfectly consistent options so readily passed over, often without argument,\(^{16}\) in favor of the conclusion that one of the components of organisms is the principle of diversification for them? Ignoring this third option would be entirely justified if Aristotle saw organisms as constructions out of more basic, independently existing entities. But he certainly does not see them in this way.\(^{17}\) And although Aristotle's non-reductive picture of organisms is well-established to a certain degree, the extent to which Aristotle views organisms as fundamental is, in my view, not always fully appreciated. I see the dominance of the two mainstream views on diversification is a case in point; indeed, we might call these *reductive* views of diversification. And given the connection between unity and diversity for Aristotle, which I will explore in detail in chapter three, viewing diversity in this reductive way will also undermine the unity of organisms, as I will argue in chapters three and four.

Moreover, it is not merely that focusing on the mainstream views leaves out a third possibility; there are strong reasons to think that, for Aristotle, *neither* matter nor form has, in itself, diversity from the matter and form of other organisms, as exemplified by the arguments given above. As Scalsas references in his argument, there is support for holding that the forms of co-specific organisms are not numerically distinct. For one thing, since form cannot exist except as the form of some composite, Aristotle

\[^{16}\text{As for example in Scalsas's exposition of the argument, laid out above.}\]

\[^{17}\text{For one argument that he does not see them this way, see Michael Loux, "Aristotle on Matter, Form, and Ontological Strategy," *Ancient Philosophy* 25 (2005), pp. 81-123.}\]
emphasizes that the efficient cause, something the same in species as what is to be
generated, must in every case transmit the form involved in any case of generation.\textsuperscript{18} Since Aristotle never addresses any further questions about where the form to be
transmitted comes from, the natural assumption is that it just is the form had by the
efficient cause. On the other side, as Whiting's argument emphasizes, there is support for
seeing matter as lacking diversity in itself.\textsuperscript{19} Aristotle says in \textit{Metaphysics} VII.3 that
matter is, in itself, neither \textit{choriston} (separable) nor a \textit{tode-ti} (a this-something) (1029a27-
29); it is only when it is operated upon by form that it becomes a genuine unity (i.e., a
body) (1041b4-9). He also says in \textit{Metaphysics} VIII.1 that matter is “that which, not
being a ‘this’ actually, is potentially a ‘this’” (1042a26-27).

Despite such difficulties on both sides, however, the mainstream views are still
the most widespread. More to the point, arguments for each of these views focus on the
fact that one component, but not the other, has in itself the diversity \textit{requisite} to serve as
the principle of diversification. The stronger conclusion that that component \textit{in fact}
serves as the principle of diversification is too often under-supported. After all, matter
and form are not independently existing substances which can be put together to make up
an organism. Both are dependent in important ways on the life of the organism. It seems
to me that these facts about matter and form greatly undermine any \textit{prima facie}
temptation to reason, from the fact that difference in some constituent is both necessary
and sufficient for the numerical difference of a composite \textit{x} and a composite \textit{y}, to the

\textsuperscript{18} See 202a9-11.

\textsuperscript{19} These and other difficulties with the mainstream views will be discussed in detail in chapter
two.
conclusion that that constituent is the principle of diversification for \( x \) and \( y \) (i.e., that it is because of the numerical difference of their matter or of their form that \( x \) and \( y \) are numerically different). This is the point at which my dissertation will take issue with both mainstream views alike.

The central project of this dissertation will be to argue that neither matter nor form is the principle of diversification; diversification for organisms is underived. Both the traditional view that matter is the principle of diversification and the view that form is the principle of diversification agree that numerical diversification is underived at some level: the level of matter, for the traditional view; the level of form for the other view. After all, numerical diversification must be underived at some level—unless one maintains that there are infinite levels of material constitution, as Aristotle certainly does not. But why can't the diversity of the organisms themselves be underived? After discussing the many difficulties facing the two mainstream views in chapter two, I will argue, in chapter three, for the thesis that organisms need no principle of diversification; they are diverse in their own right. In other words, the brute fact of diversification for an organism \( x \) and an organism \( y \) lies at the level of these organisms themselves.

That being said, I will still maintain the thesis that, for Aristotle, a composite entity \( x \) differs from a composite entity \( y \) if and only if \( x \) and \( y \) differ in some constituent; that is, that difference in some constituent is both necessary and sufficient for the

\[20\] Aristotle maintains that there cannot be an infinite regress in any of the four types of causation (see *Metaphysics* II.2). And I cannot think of any view which avoids infinite regresses and also avoids the conclusion that diversification must be a brute fact at some level of analysis. Suppose one wanted to hold that things were diversified by being in different places; this would only make sense if the places were brutally diversified, or if one were operating with a conception of space as absolute and one held that it contained points which were brutally diversified.
difference of a composite $x$ from a composite $y$.\footnote{As I stated above, in my view Callias and Socrates have numerically distinct functional matter.} (In other words, I will still maintain that organisms are composites of non-identical constituents.) But this thesis is considerably weaker than the thesis that the constituent wherein $x$ and $y$ differ is the principle whereby $x$ and $y$ are themselves diversified. It is consistent with this weaker thesis to maintain, as I will argue, not only that organisms are diverse on their own terms, rather than in virtue of one of their constituents, but indeed that it is the diversity of organisms that is the source of the diversity in their matter (precisely the reverse of the traditional view).

The thesis that organisms are diversified in their own right has been defended by others in recent times.\footnote{For example, see Edward Regis, “Aristotle’s ‘Principle of Individuation’,” \textit{Phronesis} 21:2 (1976), pp. 157-166.} However, my articulation and defense of this thesis is unconventional in two ways: first, in the way that I support it, and second, in the way that I go on to connect it with a vision of hylomorphism that remains constituent ontological. Regarding the first, I will, in chapter three, support the diversity of organisms as underived by appeal to Aristotle’s metaontology. For Aristotle, “one,” taken by itself, does not express a complete concept. This is because, for Aristotle, unity goes hand in hand with being; but, as we hear on many occasions throughout the \textit{Metaphysics}, there is no such thing as being \textit{simply}. Therefore, neither is there any such thing as unity \textit{simply}, as Aristotle affirms when he tells us in \textit{Metaphysics} XIV.1 that to be one is to be one under some count-noun: “‘One’ evidently means a measure. And in every case it is some underlying thing with a distinct nature of its own” (1087\textsuperscript{b}33-34).
All of this has, I think, important implications for the issue of diversification. It is a constraint shared by any metaontological theory that diversification presupposes unification. After all, diversity and unity are conceptually tied together—it only makes sense to talk about the diversity of things each of which is antecedently unified, and only to whatever degree each thing counts as a unity (since certain metaontological theories allow for degrees of unity). Diversity is always diversity of unities.\(^{23}\) As Avicenna put it, “plurality requires that it be understood that it derives from unity, because it is in itself an effect of unity.”\(^{24}\)

But for Aristotle, there is no such thing as unity \textit{simpliciter}: to be one (say) horse is not the same as to be one (say) color. So if diversification presupposes unification, it would make sense for Aristotle to hold that there is likewise no such thing as diversification \textit{simpliciter}; that diversification is different for each of these different sorts of unification. And in fact we find him saying just this in \textit{Metaphysics} IV.2:

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\text{[T]he other and the dissimilar and the unequal, and everything else which is derived either from these or from plurality and unity, must fall within the province of the science above-named [the science of being \textit{qua} being].—And contrariety is one of these concepts, for contrariety is a kind of difference, and difference is a kind of otherness. Therefore, since a thing is said to be one in many ways, these terms also will be said in many ways. (1004a18-23)}
\]

So for Aristotle, diversity, like its correlative concept of unity, is said in many ways; diversification is different for each irreducibly different sort of unification. What could such a thesis mean? I will argue that the best candidate for an interpretation of it is

\(^{23}\) Or, more laboriously, of a plurality of things each of which is antecedently unified.

this: that diversity is underived for each irreducibly different sort of unity. In my view, for Aristotle, individuals each of which is one $F$ are numerically diverse, and that is not to be explained by appeal to the numerical diversity of unities of some other sort. So my view on the classic question of what is the principle of diversification for individual members of the same species is that the question is misplaced—there is no lower-level explanation for their diversification. Given Aristotle’s metaontology, it is misplaced to require diversification for such individuals to derive from the diversity of one of the constituents of each (i.e., form or matter).

The second way in which my defense of this thesis is unconventional centers around my claim that rejecting the mainstream views on diversification does not necessitate rejecting a constituent ontological understanding of organisms. While it may seem that the easiest way to support my thesis is to reject constituent ontology altogether and hold that organisms are unanalyzable unities, a view that has gained a number of adherents, I find this rejection of a constituent ontological understanding of Aristotle's hylomorphism problematic for reasons explored in chapter one. In chapter four I will outline a constituent ontological version of hylomorphism which maintains both my thesis regarding the underived diversity of organisms and a constituent ontology. This chapter answers the question of how the sort of unity had by matter and the distinct sort of unity had by form relate to the fundamental unity of the individual organism which they compose. Finally, my fifth chapter will argue that the version of constituent ontology I have articulated, which maintains the underived diversity of organisms, is also compatible with both the thesis that the body of an organism includes a plurality of distinct parcels of matter and the thesis that the matter of an organism pre-exists the
organism and continues to exist (for some time) after the organism's death. Matter and form can be understood in relation to the organism whose matter and form they are in a way that, ultimately, maintains a constituent ontological understanding of the hylomorphic relationship without undermining the underived diversity of organisms.
CHAPTER 1:

CONTITUENT ONTOLOGIES AND HYLOMORPHISM

1.1 Constituent Ontology as a Commitment of the Mainstream Views

The question of what accounts for diversification among organisms cannot be properly examined in isolation from the question of one's ontology of organisms. For certain answers to the former question will be available on certain ontologies and unavailable on others, or a natural fit on certain ontologies and an unnatural fit on others. For example, if we have an atomistic ontology, like Democritus and Leucippus, a natural answer to our question would be that being composed of distinct atoms makes organism \( a \) distinct from organism \( b \). This answer is unavailable, however, for those who, like Aristotle, do not believe in atoms. The question of what diversifies organisms for Aristotle is thus bound up with questions about the details of his particular ontology of organisms, his doctrine of hylomorphism. In order to discern the candidate answers to the question of what diversifies organisms for Aristotle, we must investigate the candidate understandings of hylomorphism.

According to Aristotle’s hylomorphism, a doctrine which results from his inquiry into the principles of nature in *Physics* I, organisms are composed of matter and form. But many controversial issues underlie this general claim. For example, what implications does hylomorphism have for the ontological status of matter and form, and for the ontological status of the organism they compose? Different ways of answering
such questions have led to important divisions among Aristotelian commentators. The key division, for the purposes of this dissertation, is that between those who understand hylomorphism to imply that an organism’s matter and form are non-identical components of it and those who deny that hylomorphism has this implication. Proponents of the former view are committed to the thesis that organisms have what we might call an ontological structure and therefore are subject to ontological analysis. Proponents of the latter view are not, maintaining instead, for example, that matter and form are identical (to each other and hence to the organism whose matter and form they are), or that talk of matter and form is simply a way of expressing the fact that there are alternative descriptions of one ontologically unanalyzable entity.

This particular division among commentators is of special relevance for the question of how organisms are diversified in Aristotle. For proponents of both mainstream views cannot maintain the latter view, that organisms are unanalyzable unities lacking any distinct components; rather, they must maintain the view that matter and form are identical neither to each other nor to the organism which they constitute. After all, if matter and form are identical to each other, then it cannot be claimed that one but not the other is the principle of diversification. And if either matter or form is identical to the organism whose matter or form it is, then claiming that the source of the

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25 On this view, matter and form are identical neither to each other nor to the organism they constitute.


27 In other words, that one can describe a thing either materially or formally.
distinctness of two organisms is the distinctness of their matter or form would amount to no more than a tautology; it would amount to no more than claiming that the two organisms differ *simpliciter*. Therefore, it is only if matter and form are non-identical components of the organism whose matter and form they are, and if neither matter nor form is identical to the organism, that either can be the source of that organism’s distinction from another organism. The mainstream views, therefore, presuppose a vision of hylomorphism according to which matter and form are non-identical components of the organism whose matter and form they are.

Could a proponent of either mainstream view maintain that whichever component he claims does not serve as the principle of diversification is identical to the organism whose component it is—i.e., that matter is the principle of diversification while form is identical to the organism, or that form is the principle of diversification while matter is identical to the organism? Such views are not live possibilities for the Aristotelian commentator. If form is a genuine component of the organism which is non-identical to it, then something else must be entering into the composition of the organism; otherwise, form and organism *would* be identical. Likewise, if matter is a genuine component of the organism and non-identical to the organism, then something else must be entering into the composition of the organism; otherwise, matter and organism *would* be identical. In general, if either matter or form is viewed as a component non-identical to the organism whose component it is (and the proponent of either mainstream view must concede this),

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28 That is, one might think that a proponent of the traditional view could maintain that although matter is identical neither to form nor to the organism whose matter it is, form is identical to the organism whose form it is; and a proponent of the view that form is the principle of diversification could maintain that although form is identical neither to matter nor to the organism whose form it is, matter is identical to the organism whose matter it is.
then another component is required to secure this non-identity between the original component and the whole organism. One can therefore maintain either that both components are non-identical to the whole organism, or that both are identical to the whole organism (as well as to each other); no middle ground is available.

That being said, it is still open to a proponent of the view that form is the principle of diversification to maintain that matter is not a genuine *individual* until it is acted upon by the form. And in parallel fashion, a proponent of the traditional view might also consistently maintain that matter is made into an individual by some other principle. My argument is merely that for any proponent of one of the mainstream views, both matter and form must be such that each is non-identical to the other and to the whole organism. This leaves open the possibility that matter, while being non-identical to form and to the whole organism, might fail to be a genuine individual in its own right. It might be merely an undifferentiated “stuff” which, through the process of generation, is first made into a genuine unity. Nonetheless, it must have *some* degree of existence in its own right—enough to count as a genuine component of the organism.

So the most common understandings of what the principle of diversification is for Aristotle—the view that it is matter and the view that it is form—are deeply rooted in the presupposition that an organism is a composite of non-identical components. Before we can go on and investigate the merits and shortcomings of these two most common views, we need to understand the details of this ontological presupposition common to them in more detail, along with any merits or shortcomings it might possess. The aims of the rest of this chapter are, first, to argue that this ontological presupposition common to the two mainstream views, the presumption that organisms are composites of nonidentical
components, should be understood as meeting the constraints of a view that has, in contemporary circles, come to be called constituent ontology—in other words, that the ontological presupposition both mainstream views are committed to is a constituent ontological understanding of hylomorphism. I will then explore the central claims of a constituent ontology in general, offering textual points of support for seeing Aristotle's hylomorphism as constituent ontological. Finally, I will explore the merits of a constituent ontological vision of Aristotle's hylomorphism and the demerits of the alternative.

1.2 Aristotelian Support for Some Central Commitments of a Constituent Ontology

What, precisely, is involved in an understanding of Aristotle’s hylomorphism according to which matter and form are non-identical components of organisms? Here it is hard to ignore the various connections and disconnections with what have come to be called, in contemporary circles, constituent ontologies. This name, introduced by Nicholas Wolterstorff, is derived from the central question of Gustav Bergmann’s ontology: “What are the constituents of an ordinary thing?” Wolterstorff tells us that

29 Constituent ontologies are usually contrasted with what have come to be called relational ontologies, although to examine the latter in detail here would take us too far afield. After all, this contemporary distinction between constituent and relational ontologies is not an exhaustive dichotomy canvassing all the possible views of familiar objects. One obvious alternative is simply to deny that there is any informative answer to questions about why objects exhibit a certain form of character. Moreover, the distinction is not exclusive; there are ways of consistently combining constituent and relational ontologies. It is, therefore, far from clear that those thinkers who take the other view of hylomorphism discussed above, those who deny the thesis that matter and form are non-identical components of organisms, would count as relational ontologists. For this reason my focus here is on the exhaustive and exclusive dichotomy between those who accept the thesis that organisms have an ontological structure and those who deny it.

‘being among the constituents of a thing’ is synonymous to ‘being ‘in’ the thing’. But what is it to be ‘in’ a thing? And how closely tied to Bergmann’s peculiar ontology does Wolterstorff take this notion to be? Michael Loux provides more general insight into this question, maintaining that within a constituent ontological framework, “familiar particulars are composites, wholes, or complexes—things made up of metaphysically prior and more fine grained items. These items are to be distinguished from a thing’s commonsense parts”; nonetheless, these items are the sources of the thing’s character, and hence are responsible for the thing’s “commonsense mereological structure” (which is, after all, the manifestation of its character). In other words, a constituent ontology can, at the general level, be understood as an ontology according to which familiar objects have non-identical components which (a) are not commonsense parts of familiar objects, and (b) account for the character of familiar objects.

If we understand the notion of a constituent ontology in this way, it seems that those who advance the thesis that matter and form are non-identical components of organisms do indeed see Aristotle as a constituent ontologist. After all, they hold that matter and form are components of organisms; and we know a) that matter and form cannot be parts of organisms in the commonsense sense, and b) that Aristotle takes an organism’s matter and form (although primarily the latter) to be the sources of its character.

31 Ibid., p. 112.

Regarding (a), Aristotle tells us in *Metaphysics* Z.10 that “‘part’ is used in several senses. One of these is ‘that which measures another thing in respect of quantity’. But let this sense be set aside; let us inquire about the parts of which *substance* consists” (1034b34-36). He goes on to discuss matter and form and how they are related to the organism they compose. The implication is that matter and form are “the parts of which *substance* consists,” but they are *not* parts in the sense of parthood which “measures a thing in respect of quantity.” But commonsense parts do measure a thing in respect of quantity—they are spatial parts, and as such they are capable of measuring the spatial extent of an object. This passage therefore gives us reason to believe that matter and form are not commonsense parts. Indeed, such a distinction between types of parts is just the result that we would expect from Aristotle, since he holds that an object can persist through the loss of its mereological parts (i.e., an organism could lose its foot or its arm); but he certainly does not hold that an organism can persist through the loss of its matter or form. And regarding (b), Aristotle tells us that when we give the essence of a concrete particular, when we say what it is to be for a certain concrete particular, we must refer both to its form and to its matter. After all, “to bring all things…to Forms and to eliminate the matter is useless labor; for some things surely are a particular form in a particular matter” (1036b22-24). So he also maintains that both matter and form are involved in determining the character of an organism. Therefore the view of Aristotle’s hylomorphism according to which matter and form are non-identical components of organisms seems to meet these extra conditions involved in the contemporary conception of a constituent ontology: matter and form are not commonsense parts, and they do account for the character of the whole whose constituents they are.
These features are also reflected in the most common versions of contemporary constituent ontologies: bundle theory and bare particular theory. Bare particular theorists take the constituents of ordinary objects to include a bare particular as well as whatever properties characterize that particular, while bundle theorists take the constituents of ordinary objects to be exhausted by their properties (which they may take to be either universals or particulars). D.C. Williams christened a version of the bundle theory when he described ordinary objects as composed of “fine” or “diffuse” parts, which he called tropes, such as individual colors and shapes.\textsuperscript{33} These individual colors and shapes are not commensense parts of objects, since they, as Williams puts it, are “permeating”—they extend through the whole spatial area of the object.\textsuperscript{34} And in an obvious way, Williams’s tropes are the ultimate sources of character for each object. Similarly, Edwin Allaire, in his version of bare particular theory, maintains that an ordinary object (his example is a colored disc) is composed of two categorically distinct kinds of entities, a bare particular and a number of universals.\textsuperscript{35} These are clearly not commensense parts, since the bare particular extends throughout the spatial extent of the object, and the universals include things like color and shape which characterize the entire spatial extent of the object. And these two kinds of parts likewise account for the character of Allaire’s ordinary objects: the bare particular for its individuality and its distinctness from other objects with which it might conceivably share all its properties, and the universals for the features it has.


\textsuperscript{34} \textit{Ibid.}, p. 60.

In the ontologies of some of Aristotle’s predecessors, at least as he understood them, the same features can be found, suggesting that this conception of a constituent ontology is broad enough to characterize certain Presocratic ontologies as well. For example, consider the ontology of Anaxagoras, according to which, as Aristotle sees it, “everything has been mixed in everything…. But things…appear different from one another and receive different names according to what is numerically predominant among the innumerable constituents of the mixture. For nothing…is purely and entirely white or black or sweet, or bone or flesh, but the nature of a thing is held to be that of which it contains the most” (Physics I.4, 187b2-187b6). Here too we have the idea that the components of ordinary objects are finer objects, “imperceptible to our senses because of the smallness of their bulk” (187b1), which are not commonsense parts of the object they compose and which account for the character of that object. If we consider the view of the ancient atomists, we also find an ontology which meets these two conditions: “Democritus and Leucippus say that there are indivisible bodies, infinite both in number and in the varieties of their shapes, of which everything else is composed—the compounds differing one from another according to their constituents and to the positions, and groupings of their constituents” (On Generation and Corruption I.1, 314a22-25). Clearly these indivisible bodies are not commonsense parts; indeed, they are not part of the commonsense framework at all. And, as Aristotle tells us, “these philosophers say the differences in the elements are the causes of all other qualities. These differences, they say, are three—shape and order and position” (Metaphysics I.4, 985b12-15). The shape, order, and position of the indivisible bodies account for the character of the objects these bodies make up.
So on the conception of a constituent ontology which I have articulated, both contemporary and ancient ontologies meet the central criteria. It seems reasonable, then, taking both contemporary and ancient considerations into account, to understand a constituent ontology as, centrally, an ontology according to which familiar objects have non-identical components which are not commonsense parts and which account for the character of familiar objects. So these criteria seem to be neither too broad nor too narrow to distinguish constituent ontologies from other types of ontologies. And if we assume that Aristotle sees matter and form as non-identical components of organisms (as proponents of both mainstream views must), then his ontology clearly meets these further constraints as well, thus falling under the rubric of a constituent ontology (at least in the sense of that term delineated here).

1.3 Aristotelian Support for Some Further Characteristics of a Constituent Ontology

In addition to these two central criteria for a constituent ontology, a good number of not only contemporary but also ancient views, including Aristotle's own, meet certain other conditions often associated with a constituent ontology on the contemporary scene. One way to start exploring such conditions is to explore Loux's list of certain other features which he takes to be characteristic of constituent ontologies.\(^{36}\) As I will suggest, however, some of these other criteria may not be as central to the constituent ontological strategy as the two key criteria established above, that objects be seen as composites of

non-identical components and that these components account for the character of the objects they compose.

First, Loux maintains that the relationship between what we might call a proper constituent and the whole of which it is a constituent is irreflexive, asymmetrical, and transitive. Indeed, if we consider contemporary bundle theories and bare particular theories, we find irreflexivity and asymmetry as presumptions: the proper constituents at issue are not taken to be constituents of themselves, nor is the whole taken to be a constituent of any of its constituents. Irreflexivity and asymmetry likewise characterize the ancient atomist conception of the relationship between atoms and ordinary objects made up of atoms, in addition to the Empedoclean conception of the relationship between the four elements and ordinary objects.

The issue of transitivity is a bit more complicated. Most contemporary constituent ontologists would accept the general principle that if \( a \) is a constituent of \( b \) and \( b \) of \( c \), then \( a \) is a constituent of \( c \). Moreover, the principle would be only vacuously true for any constituent ontologists who do not believe there can be any objects that satisfy the role of \( b \)—that is, who do not believe that in at least some cases where we have an object \( O \) with constituents \( x, y, \ldots n \), some smaller grouping from within this set of constituents composes an object distinct from \( O \). Whether the principle is only vacuously true will depend upon how permissive the ontology at hand is regarding the existence of distinct objects. So, the commitment to the transitivity of the constituent relationship, though strongly associated with contemporary constituent ontologies, does not seem to be as central a commitment of the constituent ontological strategy as the two key criteria established above, nor even as central as irreflexivity and asymmetry.
The second principle which Loux sees as definitive of a constituent ontology is the principle that a whole’s constituents are only *contingently* related to each other in the way necessary to make up that whole. This is a principle with which any constituent ontologist who believes that objects with constituents come to be and pass away must agree. After all, if the relationship binding a whole’s constituents together holds necessarily, then that whole would not be a contingent being; it could not come to be or pass away.

There are complications here, however. A constituent ontologist committed to the possibility of coming to be and passing away cannot hold that the relationship that binds a whole's constituents is *de dicto* necessary. However, one could hold the relationship between constituents to be *de dicto* contingent, but *de re* necessary. This would require them to hold that although the constituents of objects do not exist necessarily, it is essential to them to enter into the constituent relationship. The other possibility for a constituent ontologist committed to maintaining the possibility of generation and destruction is to hold that the relationship between constituents is both *de dicto* and *de re* contingent. In this case, the constituents could exist without entering into the relationship that makes them constituents of a higher-order object. (Or one could hold that one type of constituent enters into the constituent relationship *de re* necessarily while another type of constituent enters into it *de re* contingently.) So although it is clear that the predication between constituents must be contingent in some sense in order for the objects they compose to come to be and pass away, there is room for variability on the precise sense of contingency and how it applies to the various constituents.
Not surprisingly, the universals or tropes which serve as the ultimate constituents in different versions of the bundle theory are seen as contingently grouped together in the constitution of a familiar object. The relationship between a bare particular and any one of the universals predicated of it is likewise contingent. And although I intend no interpretive claims here, the swervings which cause Democritean atoms to collide with each other in the void, yielding ordinary objects, seem similarly contingent; and Empedocles too at least could have consistently adopted the view that the way in which the four elemental bodies come together to yield ordinary objects is contingent. So maintaining contingency of some type in the relationship between constituents seems to be a common feature of those views which meet the central constraints of a constituent ontology as I have characterized it here.

The third principle which Loux sees as definitive of a constituent ontology is what he calls the principle of constituent essentialism. According to this principle, a whole cannot persist through the loss of any of its constituents. This doctrine is also adopted by contemporary bundle theorists and bare particular theorists; they, however, have considerable difficulty accounting for how an object can remain identical while undergoing a change in properties, since they count all a thing’s properties as its constituents. Of course, modified versions of the bundle theory have been suggested, such as Laurie Paul’s view that only some of the properties had by an individual are in fact constituents of it; the others are merely accidentally predicated of it. She argues that we should “determine sameness of persons in terms of sameness of their essential
properties while allowing them to have a broad range of accidental properties."\textsuperscript{37} This solution requires a distinction between an individual’s essential and accidental properties. On the ancient front, the principle of constituent essentialism seems likely to have been accepted by Empedocles, who surely would have agreed that an object cannot persist through the loss of any of the elements making it up. However, this principle seems less available to the ancient atomists, given the fact of growth and decay, which would seem to involve the addition and loss of atoms. Whether we should discount them as constituent ontologists or, instead, discount the principle of constituent essentialism is a question I will leave open. Another possibility, and perhaps a more amenable one, would be to see them as maintaining that not all atoms count as genuine constituents, which may allow them to commit to the principle of constituent essentialism.\textsuperscript{38}

The fourth principle espoused by many contemporary as well as ancient constituent ontologists is what Loux calls the principle of constituent identity, the principle that no two objects have precisely the same constituents arranged in precisely the same way. This principle is maintained by most contemporary bundle theorists, who, in response to Max Black’s attempt to show that two objects might have all the same properties,\textsuperscript{39} have attempted to argue that there are certain properties which, in principle,

\textsuperscript{37} Laurie Paul, “Logical Parts,” \textit{Nous} 36:4 (2002), pp. 578-596, at p. 588. Paul continues, “The properties that are essential to an individual (and thus determine what kind the individual is) would normally include properties of that person’s causal-historical origins, genetic profile, and the like.”

\textsuperscript{38} However, much more work would need to be done to work this view out, and I intend to make no interpretive claims regarding the ancient atomists here.

can be instantiated by only one object.\textsuperscript{40} Other revisions have been made to the bundle theory to avoid Black's difficulty, such as that suggested by James van Cleve, that there ultimately are only properties and no objects composed by properties.\textsuperscript{41} But both of these moves are extremely revisionary. Bare particular theorists, on the other hand, can hold to the principle of constituent identity without difficulty,\textsuperscript{42} since any two objects which have all the same properties will, on their view, have distinct bare particulars. On most versions of both theories, then, objects that are distinct will have at least one constituent which is distinct from a constituent in the other object. Among the ancient theories, it is clear that atomists would adopt this principle; no two objects could be made of precisely the same atoms. It is less clear that the principle could have been adopted by Empedocles, who does not see any of the four elements as divided into numerically distinct parcels but rather as undifferentiated ‘stuffs.’ This suggests that Empedocles might be viewed as rejecting the principle of constituent identity after all. However, he may have maintained that these stuffs are always arranged differently in distinct organisms, in which case he would have held to the principle after all. More evidence would be needed to answer the question about Empeocles's commitment to the principle of constituent identity, so I will leave this question open here.

In any case, these further principles seem to be well-established within the contemporary sphere of constituent ontologists. And among the ancient ontologies that


\textsuperscript{42} That is, if the notion of a bare particular is itself without difficulty.
we found to meet our general definition of a constituent ontology as one according to which ordinary objects are composed of non-identical components (though not commonsense parts) that account for those objects’ character, many of these principles are also adopted, although this not so in every case and in some cases sufficient evidence seems lacking. However, and most intriguing for my purposes in this dissertation, although it is not clear that the constituent ontologists who preceded Aristotle adopted all these further principles which Loux sees as associated with the constituent ontological strategy, those who read Aristotle as a constituent ontologist have no trouble finding evidence that Aristotle did hold to some version of nearly all, if not all, of these further principles, with the possible exception of the transitivity of the constituent relationship.

First, if we presume that matter and form are non-identical components of organisms, it is clear that Aristotle took the relationship between constituent and whole to be irreflexive, since he did not take either matter or form to be components of themselves in the sense in which they are components of the whole organism. He also took this relationship to be asymmetrical, since he did not think a whole could be its own matter or form.

But transitivity is a more complicated issue. Aristotle does maintain that the relation of being a thing’s proximate matter is not transitive. But some take a thing’s proximate matter to have a hylomorphic structure and hence proximate matter of its own. Kit Fine, for example, maintains such a view:

Take something which is not elemental matter (nor prime matter should there be such). It may then be supposed that it contains elemental matter. For this thing,
like any other enmattered thing, will submit to hylomorphic analysis: it will have a proximate matter (and a complementary form); the proximate matter will have its own proximate matter (and a corresponding form); and so on, all the way down to something which has no matter.44

If this view is correct, then it may turn out that, where x is the proximate matter of y and y is the proximate matter of z, x is a material cause (although not the proximate material cause) of z. Aristotle himself suggests that although different sorts of things have a matter proper to themselves, there is still a sense in which all things share the same primary constituent(s): “Regarding material substance we must not forget that even if all things have the same primary constituent or constituents, and if the same matter serves as starting-point for their generation, yet there is a matter proper to each, e.g. the sweet or the fat of phlegm, and the bitter, or something else, of bile; though perhaps these have the same constituent” (1044a15-20). In this sense, then, the relation between constituent and whole may be transitive as well as irreflexive and asymmetrical.

Regarding the second principle, the claim that the relationship between constituents is contingent, all those who see matter and form as non-identical components of organisms must read Aristotle as holding that it is de dicto contingent that an organism's matter have its form predicated of it. After all, it is only if it is contingent that an organism's form is predicated of its matter that the organism can consistently be said to come-to-be and pass away (when the form ceases to be predicated of its matter). However, those who see Aristotle as a constituent ontologist may still disagree about whether the predication between form and matter is also de re contingent; for this

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depends upon whether the matter and form that make up the organism pre-exist and persist after the life of the organism. If they do pre-exist and persist, then the predication is not only *de dicto* contingent but also *de re* contingent. (Of course, one might maintain that only one of these items pre-exists and persists.) If neither item pre-exists or persists after the life of the organism, then the form/matter predication is *de dicto* contingent but *de re* necessary—neither matter nor form can exist without being predicated of the other.

Of course, regardless of what one says about the modal status of the matter/form relationship, it is clear that for Aristotle, matter and form are essential to the organism whose matter and form they are. That is, regarding our third principle, if Aristotle is a constituent ontologist he clearly espouses the principle of constituent essentialism. For he does not think an organism can persist through the loss of either its matter or its form. (For now, we can set aside the complications regarding, say, nutrition and growth by thinking of "matter" in terms of "all a thing's matter." Indeed, it may be that although changes in size and quality occur, the parcel of matter at the *proximate* level, or at least at some higher level, can remain the same throughout these changes—a view I will support in chapter five.)

And since Aristotle does not maintain that any of an organism’s properties are constituents of it,\(^{45}\) he does not even face the difficulty that confronts contemporary bundle and bare particular theories regarding the possibility of change in properties. As Loux explains, “Aristotle…denies that the various universals we think of a substance as instantiating count as its constituents. On his hylomorphic account, the only entities

\(^{45}\) I am assuming a controversial claim: that form is not a property of a particular; it is predicated only of the matter. For a discussion of this see chapter 6 of Loux’s *Primary Ousia.*
constitutive of a substance are its matter and form and while the form is a universal, it is not predicable of the substance itself. It is predicated of the matter constitutive of the substance.”46 Objects, then, can undergo alteration in properties as long as their matter and form remain, as Aristotle clarifies in *On Generation and Corruption* I.2: “For in that which underlies the change there is a factor corresponding to the definition and there is a material factor. When, then, the change is in these factors, there will be coming-to-be or passing-away; but when it is in the thing’s affections and accidental, there will be alteration” (317a23-26). Of course, certain properties of the organism, those determined by the form’s predication of the matter, such as the property of falling under a given species and genus, will be essential to the organism. But they will be essential to it precisely because they are determined by the form’s predication of the matter; they cannot be, for Aristotle, constituents of the organism.

Finally, as for the principle of constituent identity, this too is a principle which those who read Aristotle as a constituent ontologist find good reason to conclude that he upholds. According to this principle, no two objects have exactly the same constituents arranged in exactly the same way. As Aristotle tells us at the end of *Metaphysics* VII.8, “And when we have the whole, such and such a form in this flesh and in these bones, this is Callias or Socrates; and they are different in virtue of their matter (for that is different), but the same in form; for their form is indivisible” (1034a5-8). This passage is often interpreted to mean that although two distinct objects may have the same form, they will always have distinct matter. Similarly, in *Metaphysics* V.6 Aristotle says that things are

one in number whose matter is one. This is often taken to mean that an entity $x$ and an entity $y$ are distinct from each other if and only if they have numerically distinct matter. Texts such as these might, for those who see Aristotle as a constituent ontologist, support the conclusion that Aristotle upholds the principle of constituent identity by holding that distinct objects will always have distinct matter.

Commentators who see Aristotle as a constituent ontologist and uphold form as the principle of diversification would have other texts open to them to support the principle of constituent identity. They might conclude that he upholds the principle of constituent identity by maintaining not only that distinct objects will always have different matter, but also that distinct objects will always have distinct forms. Such commentators might point to the priority of form over matter, in the sense that form is required to make the matter into a genuinely unified body; they might see the unity and distinctness of matter as parasitic on the unity and distinctness of forms. They might also point to texts such as that found in *Metaphysics* XII.6, where Aristotle says that “the causes of different individuals are different, your matter and form and moving cause being different from mine, while in their universal formula they are the same” (1071a27-29). So for proponents of either of the mainstream views, there are texts supporting the conclusion that Aristotle maintains the principle of constituent identity.

So it seems that there are at least some central points of connection between the contemporary notion of a constituent ontology and an understanding of Aristotle’s hylomorphism which sees matter and form as non-identical components of an organism. Agreement can be found on the general notion of a constituent ontology as an ontology

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47 See 1016b31-32.
according to which familiar objects have non-identical components which are not commonsense parts, and which account for the character of the objects whose components they are. Agreement can also be found on certain logical properties governing the relationship between constituents and wholes. First, for Aristotle this relationship must be irreflexive and asymmetrical, and a number of commentators would see Aristotle as maintaining that it is transitive as well, depending on one's view of the number of levels of lower-level material within an organism. Secondly, those who view Aristotle's hylomorphism as a constituent ontology must also maintain that the relationship between matter and form is *de dicto* contingent (otherwise organisms could not undergo generation and corruption). Whether it is also *de re* contingent depends upon whether either constituent can pre-exist or persist after the organism as a whole. Thirdly, there is evidence in support of viewing Aristotle as committed to the principle of constituent essentialism and, finally, to the principle of constituent identity. The latter, we should keep in mind, is stronger than the former: whereas the principle of constituent essentialism tells us only that an organism has its matter and its form essentially (leaving open the possibility that distinct organisms might share both matter and form), the principle of constituent identity tells us in addition that a difference in either matter or form between $x$ and $y$ is both necessary and sufficient for distinction between $x$ and $y$. However, we should also keep in mind that the principle of constituent identity, the principle that difference in some constituent is *sufficient* for the difference of $x$ and $y$, is not as strong as the claim that some constituent of organisms serves as the principle of their diversification. One can maintain the principle of constituent identity for hylomorphic organisms without maintain that either constituent serves as the principle of
their diversification, and it is just such a view that I will go on to articulate in chapter three.

1.4 Problems with Non-Constiuent Ontological Interpretations of Aristotle's Hylomorphism

We have seen various textual motivations supporting the idea that if, like proponents of the mainstream views, we see Aristotle's hylomorphism as implying that organisms are composites of non-identical constituents, then we have textual motivation to see it as also conforming to many constraints associated with the contemporary notion of a constituent ontology. In other words, we have support for viewing the claim that organisms are components of non-identical constituents as a version of what has, in contemporary circles, come to be called constituent ontology. But why should we make this move in the first place? Is there motivation to see Aristotle's hylomorphism as committed to viewing organisms as components of non-identical constituents, other than the mere fact that this thesis is presupposed by the mainstream views on diversification? I will now argue that we can find such support for this most basic claim of the constituent ontological strategy in Aristotle's discussion of coming to be and passing away in Physics I.8 combined with his definition of matter in Physics I.9.

At the beginning of Physics I.8, Aristotle lays out the aporia that led certain of his predecessors to deny that anything ever comes to be or ceases to be. Aristotle describes the aporia that plagued his predecessors as follows:

So they say that none of the things that are either comes to be or passes out of existence, because what comes to be must do so either from what is (ek ontos) or from what is not (ek me ontos), both of which are impossible. For what is cannot
have come to be (because it is already), and from what is not nothing could have come to be (because something must be underlying). (191a27-31)

At a very general level, the structure of the *aporia* is clear: it is supposed to be a *reductio* that attempts to pin the defender of coming-to-be (and passing away) between two horns of a dilemma. (The argument against the possibility of passing away, however, is not made explicit. It is usually assumed that this argument parallels the argument against the possibility of coming-to-be in a clear enough way to excuse its absence.) The argument against coming-to-be is that it must proceed either *ek ontos*, or *ek me ontos*, neither of which is possible. An implicit premise is that these are the only possibilities, that this is an exhaustive dichotomy; and the upshot is supposed to be that coming-to-be is impossible.

The key question around which this dilemma revolves, then, is the following: how should we think of that *from which* (ek) coming-to-be proceeds—as *ontos*, or as *me ontos*? Aristotle's technical term here is *hupokeimenon*. But in the attempt to get clear on precisely what problem is supposed to face each horn of the dilemma, we find that numerous ambiguities and obscurities lurk beneath the surface. First, since Ancient Greek lacks an indefinite article, it is unclear whether we should interpret the term *ontos* as *being* itself, or instead as *a being*. In other words, as W.D. Ross puts it, it is unclear whether the dilemma is to be interpreted as meaning “‘either from what is or from what is not’ or ‘either from what is it or from what is not it’.”

But there is another level of ambiguity here than that which Ross points out. If we should interpret it in the latter way

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48 William D. Ross, *Aristotle's Physics* (Oxford: Clarendon Press, 1936), p. 494. He concludes that “the latter seems to be the meaning, for the first of the other pair of alternatives…presents no obvious impossibility such as is referred to in 29.”
and hence as a being, then it is unclear whether that being is supposed to be considered only qua being (despite the fact that it may fall under some more determinate kind as well), or whether ontos is instead an incomplete schema which requires supplementation in each of its instantiations by the more determinate kind under which the ontos at hand falls. If it is an incomplete schema, then is it supposed to be supplemented merely, as Ross holds, by the pronoun “it”, or rather by a specification of some more specific type under which the ontos at hand falls?

Addressing all of these interpretive questions about the dilemma would take us too far afield from the concerns of this chapter. However, we need not answer all of them in order to set the stage for answering the question that concerns us here: namely, that of whether this dilemma sheds any light on the advantages or disadvantages of seeing Aristotle's hylomorphism as an instance of constituent ontology. Toward answering this question, I want to focus on one particular feature of Aristotle's response to the Parmenidean dilemma: his constant reference, in the last three chapters of Physics I, to the hupokeimenon as something which persists throughout a case of coming-to-be.

Regarding the hupokeimenon for cases of substantial coming to be, i.e. matter, he writes in Physics I.9:

Now we distinguish matter and privation, and hold that one of these, namely the matter, accidentally is not, while the privation in its own nature is not; and that the matter is nearly, in a sense is, substance, while the privation in no sense is.... For the one which persists is a joint cause, with the form, of what comes to be—a mother, as it were" (192а4-14).

If one maintains that hylomorphism is not a version of constituent ontology, how does this affect what one can say about the persistence of matter? According to the non- constituent ontological strategy, organisms are unanalyzable unities, lacking any
components non-identical to themselves. My key criticism is that on this view, one seems forced into the conclusion that matter can persist only in type, and never in token. After explaining why the proponent of the non-constituent ontological strategy cannot maintain the persistence of token parcels of matter within organisms, I will argue that persistence in type alone is not strong enough to support Aristotle's definition of matter in *Physics* I.9 and the ways in which he insists that it differs from his predecessors' views on the "underlying nature" (192a11), hence undermining the non-constituent ontological strategy.

Why is the proponent of the non-constituent ontological strategy unable to maintain the persistence of token parcels of pre-existent matter within organisms? If a token parcel of matter did pre-exist the organism (hence being non-identical to the organism) and subsequently persist within the organism, then in order to avoid commitment to constituent ontology this matter would have to be identical either to the form or to the composite as a whole. Only then would the composite escape including a component non-identical to it. But neither of these options is sustainable.

Regarding the first possibility, if the matter were identical to the composite's form, then it could not play the role Aristotle describes in *Physics* I.7-9 as being "of its own nature to desire and yearn for" the form. As Aristotle explains, "Yet the form cannot desire itself, for it is not defective....The truth is that what desires the form is the matter." Matter must be non-identical to form.

Regarding the second possibility, if matter were identical to the composite itself, then it could not pre-exist the composite (lest the composite pre-exist itself). But

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49 192a31-33.
Aristotle tells us, “as potentiality it does not cease to be in its own nature, but is necessarily outside the sphere of becoming and ceasing to be.... For my definition of matter is just this—the primary substratum of each thing, from which it comes to be, and which persists in the result, not accidentally" (192b31-33). Aristotle's emphasis on the persistence of matter implies that matter pre-exists the hylomorphic composite. So if matter both pre-exists and persists in the composite, then it must be non-identical to that composite.

Matter, then, must be both non-identical to form and non-identical to the composite. This means that if one adopts the non-constituent ontological strategy, one cannot see matter as persisting in *token* (lest it fail to meet these constraints of "yearning for the form" and pre-existing the composite). The most a proponent of the non-constituent ontological strategy can claim is that the matter persists merely in *type*. On such a view, there is no commitment to the constituent ontological strategy.

So the non-constituent ontological strategy cannot maintain that matter persists in *token* throughout a case of transformation; hence they must interpret the definition of matter here in this looser way, as referring only to persistence in type. The constituent ontological strategy, on the other hand, is able to interpret persistence here in the strongest sense possible: as sameness in token. One point of support for this stronger view of persistence is the fact that Aristotle does not add any qualifiers to his claim about the persistence of matter (except to strengthen the sense of persistence by clarifying that

matter persists non-accidentally), thus making a *prima facie* case for aligning it with a claim about numerical persistence rather than some more general kind of persistence.

In the remainder of this section, however, I want to give a further argument supporting the interpretation of this passage as referring to the persistence of numerically one parcel of matter (rather than mere persistence in type) throughout a case of generation. This argument is based on Aristotle's discussion of a strange example given at the end of *Physics* I.8. He asks us to suppose that a dog comes to be from a horse.\(^{51}\) He then tells us: “The dog would then, it is true, come to be from animal (as well as from an animal of a certain kind), but not as animal, for that is already there. But if anything is to become an animal, *not* accidentally, it will not be from animal...” (191b21-23). There are many questions we could ask about this analogy, such as why he chooses a case that he takes to be impossible, but for my purposes here I want to focus on just one point: In this case, Aristotle is clear, *an animal comes to be only accidentally, because an animal already existed* (the horse). It is, rather, the *dog* that comes to be non-accidentally, because it comes not from a *dog* but from a *horse*. A dog can come non-accidentally from a horse, but an *animal* cannot come non-accidentally from a horse. To generalize this point, in order to come to be non-accidentally, a thing \(t\), characterized *qua* type \(T\), cannot come from something that also falls under type \(T\).\(^{52}\) Rather, \(t\) must come from something that does not fall under type \(T\) at all, like the case of the dog coming from the horse (which does not fall under the type "dog" at all).

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\(^{51}\) Here I depart from the Barnes translation, which reads Aristotle as asking us to suppose that a dog comes to be from a dog, or a horse from a horse.

\(^{52}\) It is not enough merely not to *characterize* the terminus a quo as falling under type \(t\). The *terminus a quo* cannot fall under type \(t\) at all. This is clear, again, because Aristotle says that an animal comes from a horse only accidentally.
However, we have just seen that the proponent of the non-constituent ontological view of hylomorphism must maintain that the matter for a case of generation is the same in type as the terminus ad quem for that case of generation. As argued above, for the non-constituent ontological view sameness in type must be strong enough to count the matter for a given case of generation as persisting non-accidentally throughout that case of generation (to conform with Aristotle's definition of matter just given). But then the worry arises that for the proponent of the non-constituent ontological strategy the generation of an organism, e.g. a human being, may after all fail to meet the criterion just given for counting as a case of non-accidental coming to be. On this view, the case of a human being coming to be from some pre-existent matter may instead turn out to be like the case of an animal coming to be from a horse, since the human being's pre-existent matter must also fall under the type "human being" just as the horse also falls under the type that characterized its pre-existent matter (in this case, "animal").

One natural response on behalf of the proponent of the non-constituent ontological strategy would be to point out that whereas the horse falls under the type "animal" not merely potentially but also actually, the pre-existent matter for the generation of a human being falls under the type "human being" only potentially. However, the textual evidence suggests that this qualification should not be necessary in order to fully understand the claim he has made about accidental vs. non-accidental coming to be in the horse and dog case. For, immediately after completing his analysis of this case and noting that his view does not subvert the exhaustive dichotomy between being and non-being, he writes, "This then is one way of solving the difficulty. Another consists in pointing out that the same things can be spoken of in terms of potentiality and
actuality. But this has been done with greater precision elsewhere" (191b27-29). The implication is that the notions of potentiality and actuality do not enter into a complete explanation of the horse and dog case, that the appeal to potentiality and actuality constitutes an entirely different way of solving the dilemma. If this is so, then the proponent of the non-constituent ontological view cannot respond to the objection given above by appealing to the notions of potentiality and actuality.

For the proponent of the constituent ontological understanding of hylomorphism, on the other hand, these passages do not present a problem. There is no worry that the case of an organism coming to be from its pre-existent matter will turn out to be too similar to the case of a horse coming to be from an animal. For proponents of a constituent ontological hylomorphism need not maintain that the terminus a quo falls under the same type as the terminus ad quem. Indeed, proponents of the constituent ontological strategy generally do not maintain the persistence of any type between the terminus a quo, i.e. the matter, and the terminus ad quem, since they take the matter to persist within the terminus ad quem as a constituent that is non-identical to the terminus ad quem.53

So given the constraints of the non-constituent ontological view along with Aristotle's definition of matter as persisting non-accidentally throughout a case of coming to be, a shared type must persist between the pre-existent matter for a given case of generation and the item to be generated, and this persistent type must be sufficient to support the non-accidental persistence of that matter (even though no token persists on

53 Generally, they do not even maintain that matter is potentially of the same kind as the terminus ad quem. Rather, they maintain that the pre-existent matter for the generation of a human being is potentially the matter of a human being (not potentially a human being).
this view). But Aristotle's explanation of the hypothetical case of the generation of a dog from a horse suggests that in cases of non-accidental coming to be, the type that we use to refer to the *terminus ad quem* cannot also characterize the *terminus a quo* (that is, there cannot be a type that persists non-accidentally between the two).\(^{54}\)

My argument suggests that the non-constituent ontological view either must not take full account of Aristotle's definition of matter (by not allowing for its non-accidental persistence at all) or else must violate the rule Aristotle sets up in his example of the dog being generated from the horse (that a case of coming-to-be is only non-accidental if the type that we use to specify the *terminus ad quem* does not also characterize the *terminus a quo*—if, that is, the type that characterizes the *terminus ad quem* does not persist throughout the case of generation). Trouble therefore lurks for the non-constituent ontological view's commitment to the persistence in type of the pre-existent matter for a given hylomorphic composite's generation, a commitment required for the view to conform to Aristotle's requirement of the non-accidental persistence of matter throughout a case of generation.

The proponent of the constituent ontological strategy, on the other hand, can maintain that Aristotle's reference to matter as that "which persists in the result, not accidentally" (192ª33) requires the persistence of numerically one token parcel of matter. Understanding the definition of matter in this way means that they are not committed to the claim that any persistent type is shared between the *terminus a quo* and the *terminus ad quem*. For the constituent ontologist, therefore, unlike the non-constituent ontologist,

\(^{54}\) E.g., again, a dog can come non-accidentally from a horse, but an animal cannot come non-accidentally from a horse.
no conflict arises between this claim and the passage about a dog coming to be from a horse. And more importantly, the constituent ontologist can interpret Aristotle’s language regarding the persistence of matter in the strongest sense, as the persistence of numerically one parcel of matter, without qualifying Aristotle’s terminology.

1.5 Conclusion

I have argued that the two mainstream views regarding diversification in Aristotle, the view that the principle of diversification is matter and the view that it is form, presuppose an interpretation of Aristotle’s hylomorphism according to which the component that serves as the principle of diversification for an organism is non-identical both to the other component of that organism as well as to the organism itself. This is because, if matter and form were identical to each other, then neither would have more claim than the other to serving as the principle of diversification; and if the component purported to be the diversifier of organisms were identical to the organism whose component it is, then claiming that that component is the principle of diversification for organisms amounts to no more than claiming that organisms are the principle of diversification for organisms, a tautology which implies that there is no principle of diversification for organisms after all.55

This chapter has also examined some of the features of a constituent ontology in general, arguing that if one takes the first step of viewing Aristotle's hylomorphism as committed to the claim that organisms are composites of non-identical components, there

55 And, as I have argued above, one cannot maintain that the component which does not serve as the principle of diversification is identical to the organism while the component which does is not identical to the organism.
is also evidence for Aristotle's own commitment to the features that characterize the contemporary notion of a constituent ontology, and thus for seeing Aristotle's hylomorphism as a version of the constituent ontological strategy. For this reason, I will refer in the remainder of the dissertation to the ontological presupposition of the mainstream views as a constituent ontological presupposition.\textsuperscript{56}

But why should we be motivated to view Aristotle as committed to this first step anyway? That is, why not simplify matters and view Aristotle's hylomorphism in a non-constituent ontological way, maintaining that organisms are unanalyzable unities lacking any non-identical components? In particular, are there any motivations for a constituent ontological hylomorphism other than the ability to maintain one of the mainstream views on diversification? The fourth of this chapter has argued for one such motivation: the ability of the constituent ontological strategy to maintain that the pre-existent matter for a hylomorphic composite persists not in type but in token, maintaining Aristotle's definition of matter in an unqualified sense, as well as his claim about non-accidental coming to be in the passage concerning the hypothetical coming to be of a dog from a horse. This serves as motivation for maintaining the ontological presupposition common to the mainstream views, which I have given reason to see as a constituent ontological presupposition.

But what about the mainstream views themselves? We have one key reason to maintain the constituent ontological strategy which the mainstream views presupposes,

\textsuperscript{56}This claim, however, is not essential for the argument of the remainder of the dissertation. One who wishes to dispute the constituent ontological label for the ontological presupposition common to the mainstream views should, in the remainder of the dissertation, think only of the commitment to non-identical constituents whenever I mention constituent ontology in connection with the mainstream views.
but what reasons may there be to maintain or dispense with the mainstream views? I will now turn to the project of evaluating the two mainstream views on the principle of diversification for Aristotle.
CHAPTER 2:
ARISTOTLE AS A CONSTITUENT ONTOLOGIST AND THE PRINCIPLE OF DIVERSIFICATION: CRITIQUING THE LITERATURE

The two mainstream views on the principle of diversification in Aristotle, the view that it is matter and the view that it is form, both presuppose, as I have argued in the previous chapter, a constituent ontological understanding of Aristotle’s hylomorphism. According to such an understanding of hylomorphism, matter and form are non-identical components of organisms—non-identical, that is, both to each other and to the organism whose matter and form they are.57 Since the two mainstream views on diversification in Aristotle share such a fundamental ontological presumption, namely, what I have called a constituent ontological understanding of Aristotle’s hylomorphism, I have grouped their respective evaluations together within this chapter.

The project of this chapter is twofold: first, to explain the two mainstream views on diversification in Aristotle in detail, and second, to present what I take to be some of the key difficulties facing these views. Although the project of the chapter is expansive, its role within the dissertation as a whole is modest: it aims, ultimately, to articulate a big picture of the various difficulties facing the two mainstream views, so that we can see

57 In addition, as I have also argued in the preceding chapter, there is good evidence for seeing Aristotle as maintaining other claims central to what has come to be known as the constituent ontological strategy.
why one might be motivated to turn in an entirely different direction in the search for a view on diversification. This means, of course, that I do not see any of the arguments I will present in this chapter, nor indeed the whole set of them, as decisive against either of the mainstream views. There are enough variant readings of texts in Aristotle to allow proponents of a given view to respond to textual arguments against that view, and there are enough lacunae in the texts to allow proponents of a given view the freedom to develop responses to philosophical arguments against that view. In a sense, then, the best way to argue against any given view on the issue of diversification in Aristotle is to propose an alternate view that faces significantly fewer difficulties, and proposing such a view is the aim I will undertake in the next chapter.

2.1 The Traditional View: Matter as the Principle of Diversification

Let us begin with an exposition of the traditional view. Although Aristotle connects matter with numerical diversity in a number of places, the text at the end of Metaphysics VII.8 is, as mentioned in chapter one, at the forefront of the traditional view. For Aristotle there says explicitly not only that distinct individuals have distinct matter, but that Socrates and Callias are distinct dia their matter (1034a5-8). I have already mentioned that Thomas Aquinas was a proponent of this view; he maintains that what he calls designated matter is distinct in different human beings, and that the diversity of their

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58 See, for example, Metaphysics V.6 (1016b31-32), “Again, some things are one in number, others in species, others in genus, others by analogy; in number those whose matter is one”; Metaphysics VII.11 (1035b30-31), “when we come to the individual, Socrates is composed of ultimate individual matter”; and Metaphysics XII.8 (1074a33-35), “But all things that are many in number have matter. (For one and the same formula applies to many things, e.g. the formula of man; but Socrates is one.)”
matter is the source of the diversity of different human beings. Among contemporary scholars, proponents of this view include Montgomery Furth, Edmund Halper, Frank Lewis, Michael Loux, and Michael Wedin. Furth, for example, writes that Aristotle “certainly holds that two distinct individuals not differing in species are nonetheless distinguishable in point of their distinct material components: meaning in this case, presumably, distinct parcels of ‘sensible matter’, Earth and Air, flesh and bone….” All these commentators understand the proximate matter of organisms, rather than some lower-level matter, to be the principle of their diversification.

Of course, proponents of the traditional view need not agree about how many levels of matter there are beneath that of an organism’s proximate matter. Lewis maintains that there are a number of these levels; as he puts it, “In the usual case in which a form is predicated of a given example of matter, the matter is itself a compound of form and matter (prime matter is the single exception).” Loux elaborates this view more explicitly:

59 St. Thomas Aquinas, On Being and Essence II, p. 32.
60 Halper, One and Many in Aristotle's Metaphysics.
62 See p. 229 of “Aristotle’s Constituent Ontology.”
65 This leaves open, of course, whether we should understand the proximate matter that diversifies organisms in functional terms (i.e., as the organism’s body) or in Empedoclean terms (perhaps as some mixture of the elements). We will return to this issue in the second part of this chapter.
66 Frank Lewis, Substance and Predication in Aristotle, p. 156.
Since Socrates and Callias are members of a single lowest-level kind, their respective parcels of matter are indiscernible as to kind: both are parcels of flesh and bones. Aristotle, however, wants to construe flesh and bones as hylomorphic composites in their own right.…each of the parcels of matter has a constituent over and above its constitutive universal—some lower-level matter. … Aristotle, of course, refuses to countenance the possibility of an infinite regress in material causation (994a1-4). At some point, he insists, we will arrive at an original matter—a matter that has nothing else for its matter.67

But the traditional view leaves room for disagreement regarding how many levels of matter there are beneath the level of proximate matter, and also for disagreement regarding the level at which we find the matter that has no matter of its own. Classically, Aristotle is seen as endorsing the existence of prime matter, a matter for elemental transformation which is purely potential. A key text for this thesis is found in On Generation and Corruption: “Our own doctrine is that although there is a matter of the perceptible bodies (a matter out of which the so-called elements come-to-be), it has no separate existence, but is always bound up with a contrariety” (329a26-27). But this classical understanding of prime matter has come under great scrutiny in recent times; for an essenceless and purely potential substratum yields significant philosophical difficulties.68 Consequently, the view that the ultimate matter for Aristotle, the matter that has no matter, just is elemental matter has enjoyed increasing popularity.69 All these very different views of how many levels there are in the material hierarchy, their merits

or demerits notwithstanding, are open to proponents of the traditional view that matter is the principle of diversification for Aristotle.

Although there is well-founded controversy among proponents of the traditional view regarding the question of how many levels are found in Aristotle’s material hierarchy, there is a well-founded consensus among them that it is proximate matter that serves to diversify organisms. A second issue of great controversy among proponents of the traditional view regards whether there is some further principle of diversification for proximate matter: Is the matter that serves to diversify organisms diverse in its own right, as a matter of brute fact, or is there something that serves as the principle of diversification for it? If the latter, then there are three options. First, one might maintain that the proximate matter of organisms is diversified by the lower-level parcels of matter (elemental matter, perhaps) of which it is composed, with these lower-level parcels of matter in turn either being diversified by their own matter or having their diversity non-derivatively or brutely. Or second, one might maintain that the proximate matter of organisms is diversified by the lower-level matter which makes it up, with this lower-level matter in turn being diversified neither by its matter nor brutely, but by an entirely different principle. Or third, one might hold that the proximate matter of organisms is itself diversified by an entirely different principle (not by its matter at all). Without contradicting the basic commitment to matter as the diversifying principle, a proponent of the traditional view might maintain any one of these sorts of views on the question of whether there is some further principle of diversification for the proximate matter of organisms. For example, Loux suggests a view of the second variety: “what gives us a
diversity of parcels of any of the elements at a time is the fact that the parcels have numerically distinct proper places at that time.”

Proponents of the traditional view, then, need not agree on the nature of Aristotle’s material hierarchy, nor about whether there is some further principle of diversification for the proximate matter of organisms. But there is another important ambiguity in the claim that matter is the principle of diversification: Is it the principle of diversification only for organisms existing at the same time, or might it serve as the principle of diversification for organisms existing at different times as well? How far does the explanatory power of this principle reach?

The answer to this question depends upon whether proponents of the traditional view must accept the possibility that an individual at a given time could be composed of matter distinct (in whole or in part) from the matter which composed that individual at an earlier time. For, as I now want to argue, if proponents of the traditional view must accept the possibility that an individual can gain or lose matter in this way, then they cannot maintain that matter is the principle of diversification for organisms existing at different times. These two theses conflict because, given the first, Socrates can be at one time composed of matter distinct from the matter that composes him at another time; but given that matter is the principle of diversification for organisms existing at different times, if an individual x and an individual y are composed of distinct matter it follows that x and y themselves are distinct. So if proponents of the traditional view are committed to the claim that an organism at one time can be composed of different matter than that which composes them at another time, and if matter is taken to be the principle

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of diversification for individuals existing at different times, then individuals can be no more stable than their shifting matter. But of course this is not enough stability for Aristotle; so both of these claims cannot be maintained.

So are proponents of the traditional view committed to the possibility that an individual at a given time could be composed of matter distinct (in whole or in part) from the matter which composed that individual at an earlier time? If so, they cannot maintain that matter is the principle of diversification for organisms existing at different times. And I want to argue that it is, at the very least, extremely difficult to see how proponents of the traditional view could avoid commitment to this possibility. First, Aristotle clearly admits that organisms take in matter not previously found in their bodies when they eat.\textsuperscript{71} To avoid the conclusion that taking in this makes their matter distinct from the matter they had previously, proponents of the traditional view would have to maintain that, rather than changing the identity of the matter the organism already has (and rendering it distinct from this previously existing matter), the matter being incorporated into an organism is given its identity by the matter the organism already has.

The difficulty, though, is that this option does not seem to be open to the proponent of the traditional view. For this option requires that the matter of the organism can maintain its identity while matter not previously included in it is incorporated into it. But in virtue of what could the matter of the organism remain stable through this incorporation? The proponent of the traditional view cannot reply that it is stable because it remains the matter of a single organism (i.e., that it is diversified by the organism whose proximate matter it is, so that an organism has the same matter over its entire

\textsuperscript{71} See his discussion of growth in \textit{On Generation and Corruption} I.5.
lifespan), because the traditional view also has it that that organism is diversified by this matter. Such a move would, therefore, be circular. The proximate matter of an organism must, given the traditional view, have its identity independently of the identity of the organism whose matter it is. It must be diversified either brutally, in its own right, or else by some other principle (e.g., the matter which makes it up, or the place in which it is found, as discussed above). But it is difficult to see what else, aside from the organism itself, could guarantee that the organism's matter maintains its identity throughout the process of growth. If this argument goes through, then proponents of the traditional view cannot see matter as the diversifier for organisms existing at different times, but only as the diversifier for organisms existing at the same time.

We have seen three ways in which proponents of the traditional view can differ concerning the nature of matter, their proposed diversifier, and one way in which there is good evidence to think they cannot differ. What about their view of the other constituent of organisms, form? Thomas is in the minority among proponents of the traditional view regarding his belief in distinct forms for distinct individuals. Most proponents of the traditional view maintain that organisms under a single species share an identical form. For example, Frank Lewis writes that “a single form is predicabile of different portions of matter—Socrates and Callias, for example, have different matters but the same form…so that a form too is a universal.”72 Indeed, the commitment to form as identical in different organisms has become so central to the traditional view that it serves as a premise in the

72 Lewis, Substance and Predication in Aristotle, p. 154.
argument often given in favor of that view. We have already seen a version of this argument as laid out by Scalsas. Loux also endorses a version of this argument:

[S]ince Callias and Socrates belong to the same lowest-level substance kind, they have precisely the same constituting universal—the substantial form associated with their common proper kind, and it is a monadic universal. So Callias and Socrates overlap; they share a constituent. How, then, is it that they are numerically different? The assumption is that since they are numerically different, they must differ in a constituent; and Aristotle tells us that they do; they have numerically diverse parcels of matter as constituents.

But despite the general agreement, among more recent commentators within the traditional view, that cospecific organisms share a single form, there is no philosophical conflict between the belief in distinct forms for distinct individuals and the belief that it is matter that serves as the principle of diversification. Indeed, for Thomas, although distinct individuals have distinct forms, form is not the principle of diversification because “matter is the principle by which forms are individualized.” So proponents of the traditional view might even maintain that matter is the principle of diversification for the forms of organisms as well as for organisms themselves.

2.2 The Nontraditional View: Form as the Principle of Diversification

Proponents of the view that form is the principle of diversification include Michael Frede, Wilfrid Sellars, Jennifer Whiting, and Charlotte Witt. According to

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73 See chapter one.


75 Summa Theologiae, trans. Fathers of the English Dominican Province (Ypsilanti, MI: NovAntiqua, 2009), I, q. 75, a. 5, resp.

76 Frede, Essays in Ancient Philosophy.
these commentators, each individual organism has a form that is non-identical to the form of any other organism, and it is because it has a form non-identical to the form of any other organism that a given organism counts as distinct from another. Commentators in this camp disagree, however, about the precise nature of forms. Most proponents of the nontraditional view see forms as abstract principles of organization, to be sharply distinguished from the matter which they organize. Michael Frede provides a helpful characterization of this understanding of form. Discussing animate things, he writes, “In their case the form is the soul. Let us regard this soul as the organization of an object, or its disposition to behave or to lead the kind of life characteristic of that kind of object…. There always has to be some matter that is thus organized, but it does not have to be the same matter.” Commentators in this camp for the most part agree that forms are diverse as a brute fact, that the principle of diversification for organisms requires no further principle of diversification.

There are, however, exceptions, or at least borderline cases. Jennifer Whiting has an entirely different view of the nature of form, arguing that “[t]he embodiment or realization of a species form in matter is sufficient for the existence of an individual form


78 Whiting, "Form and Individuation in Aristotle."

79 Witt, Substance and Essence in Aristotle.

80 Michael Frede, Essays in Ancient Philosophy (Minneapolis: University of Minnesota Press, 1987), p. 76.

81 See, for example, Charlotte Witt, Substance and Essence in Aristotle (Ithica: Cornell University Press, 1989), p. 177.
at a time. We can even say that the realization or embodiment of a species form in matter is an individual form.”

In addition to maintaining that matter is involved in the identity of individual forms, Whiting also maintains that matter is somehow involved in the diversification of forms; it is a necessary but not a sufficient condition for their diversification. Indeed, her view of the nature of individual form as including matter does seem to rule out the more common thesis among proponents of the view that matter plays no role at all in the diversification of forms. So although Whiting affirms the claim that form is the principle of diversification, given her idiosyncratic view of form (according to which matter plays a key role in both the identity and diversity of forms), it is not clear that she belongs firmly in the camp of those who view form, as opposed to matter, as the principle of diversification. So the lines between these two views may not be entirely black and white. However, most proponents of the view maintain the diversity of individual forms as underived.

Supporters of the view that form is the principle of diversification, unlike proponents of the traditional view, also tend to agree that forms are not only the principle of synchronic but also the principle of diachronic diversification. After all, since an individual form persists at least for the lifespan of the individual, there is no reason for proponents of this view to restrict form’s role to cases of synchronic diversification only. Continuity of form can, without absurdity, guarantee identity through change as well as at a single moment within the life of an organism.

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82 See p. 369 of “Form and Individuation in Aristotle.”

83 Ibid., pp. 370-373.
There is room within the view that form is the principle of diversification for great disagreement concerning the nature of matter. Apart from Whiting, however, we find that proponents of this view tend to agree that matter is diversified by form rather than in its own right or by some other principle of diversification. After all, they face no inconsistency by adding to the explanatory power of form in this way. It is interesting to note, however, that among proponents of the traditional view it is extremely rare (again, Thomas is one exception) to find the view that form is diversified by matter (since most proponents of the traditional view see form as a universal). Among proponents of the view that form is the principle of diversification, on the other hand, many agree that matter is diversified by form.

So within each of the mainstream views there is room for significant disagreement over the nature of matter or of form, as well as for disagreement over whether a further principle of diversification is needed for matter or form. Overall, however, a greater degree of controversy over these issues seems to be found among those within the traditional camp than among those within the nontraditional camp. In addition, I have argued that it is at least extremely difficult for proponents of the traditional view to maintain that matter diversifies organisms which exist at different times, while proponents of the nontraditional view can (and for the most part do) maintain that form is the principle of diversification both for organisms existing at the same time and for organisms existing at different times.

2.3 Critiquing the Traditional View

With this outline of the philosophical contours of each view in mind, we can now move on to the project of presenting the difficulties that face these mainstream views.
Let us first examine the traditional view, looking again at the passage in *Metaphysics* VII.8 which proponents of the traditional view see as an affirmation of that view. Again, Aristotle there writes, “And when we have the whole, such and such a form in this flesh and in these bones, this is Callias or Socrates; and they are different in virtue of [\textit{dia}] their matter (for that is different), but the same in form; for their form is indivisible” (1034a5-8). This text, of all those that are often taken to support the traditional view, is the strongest piece of evidence for that view; for the others say merely that numerically distinct things have different matter. This text asserts the stronger claim that Callias and Socrates differ \textit{dia} their matter. Proponents of the traditional view usually take this text not only as support for their view, but as a direct statement of it. However, whether it is a direct statement of their view depends upon whether there are textual motivations for understanding the term \textit{dia} in the strong sense that supports the traditional view, a question which I will explore later in this chapter.

Another way to support a weaker reading of \textit{dia} here is to show that the stronger reading employed by the traditional view leads to difficulties. So let us adopt the hypothesis that \textit{dia} here should be understood in the explanatory sense, as presupposed by the traditional view, and consider this text in detail to see what difficulties might result. The reference to “matter” in the text could be understood in two ways: either as functional matter (i.e., the organism’s body), or as Empedoclean matter (i.e., as some mixture or combination of the elements). But if we follow the traditional view and adopt the explanatory reading of “\textit{dia},” according to which the numerical diversity of their matter explains the numerical diversity of Socrates and Callias, we meet with serious challenges on both of these disambiguations of the term “matter.” Suppose first that the
reference is to functional matter. Given the strong reading of *dia*, the text tells us that their functional matter explains the diversity of Socrates and Callias. The problem with this reading is that a thing’s functional matter is brought into being by the action of the form, which endows the functional matter with the unified, functional economy that makes it what it is. Therefore, as Jennifer Whiting points out, to explain diversification in terms of functional matter is (at least in part) to explain diversification in terms of form, so that on this reading matter alone does not account for the numerical diversity between Socrates and Callias after all. So if the reference is to functional matter, then the text is not saying unequivocally that matter is the principle of diversification, but instead that form plays some key role in the diversification of organisms. It seems, then, that this text cannot support the traditional view that matter, and not form, is the principle of diversification if we understand it as referring to functional matter.

What if we instead interpret the text as referring to Empedoclean matter? On this reading, Aristotle is telling us that although Socrates and Callias are one in kind, they are numerically distinct because the Empedoclean matter of each is numerically distinct from that of the other. The difficulty with this reading is that the very problem that their Empedoclean matter is supposed to resolve arises for it: the Empedoclean matter of Socrates and Callias is the same kind of stuff (flesh and bone, or a mixture of the

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84 In keeping with this fact, an organism’s functional matter cannot survive its corruption.

85 Whiting, “Form and Individuation in Aristotle,” pp. 359-377. She uses the term “individuation” for what I call “diversification.”

86 See Loux, “An Exercise in Constituent Ontology,” p. 41, for the original version of this argument on which the one I am about to give is based.
elements, or whatever it is that the Empedoclean matter turns out to be\(^{87}\)). Are we to apply the principle again, supporting the diversity of Socrates’s and Callias’s Empedoclean matter by holding that it, in turn, has matter of its own which is numerically distinct in each of Socrates and Callias? Supposing their matter even has matter of its own,\(^{88}\) that matter will not resolve the difficulty; for the problem which it was meant to resolve will again arise for it. It too will be the same in kind in both Socrates and Callias, and we will have to appeal to its matter to find numerical difference (supposing, again, that it even has any matter of its own). This regress will continue until we reach the lowest level of matter that can be found in Aristotle’s sublunary world. As I have already said, there is scholarly disagreement over whether this lowest level just is the level of the elements, or whether the elements in turn have matter of their own: the essenceless, purely potential substratum traditionally referred to as prime matter.\(^{89}\) But either way there is no escape from our dilemma. For the matter of Socrates and Callias will at this level of analysis be made up of the same kinds of elements; and if these in turn do have a matter of their own, the mystifying prime matter which tradition places in total opposition to the pure actuality of the unmoved mover, it is difficult to see how it could be the source of numerical diversification. For the same problem arises for prime matter in an even more extreme way: granted, it does not fall under the same kind in

\(^{87}\) My own view is that the Empedoclean matter for any organism is always some mixture, a homoiomerous compound (as discussed in *On Generation and Corruption* I.10). Whether we identify this mixture with, say, flesh, is a further question, since it may be that Aristotle thinks flesh cannot exist independently of the organism and so really counts as functional matter. I will leave this question open.

\(^{88}\) And if it does not, then the insufficiency of the view that Empedoclean matter is the principle of diversification has already been shown.

\(^{89}\) I side with the latter view (for which I think there is not only textual but also important philosophical justification), but again, this view is not without difficulty.
Callias and Socrates, but only because, being pure potentiality, it falls under no kind at all.\textsuperscript{90} So some other principle would be needed to diversify it; but the one under consideration will not suffice, because prime matter has no matter of its own. And Aristotle clearly does not believe prime matter to be of its own nature parcelled out into distinct bits; this would liken it to what are called in contemporary circles bare particulars. Bare particulars are essenceless, like prime matter, but they are brutally diversified. Whether we admit the existence of prime matter or not, then, the thesis that their Empedoclean matter is the principle of diversification for things falling under the same kind ultimately fails to deliver, because at every level of analysis their Empedoclean matter faces the very problem it was called upon to avoid.

However, it might be thought that there is another way out of this argument for proponents of the explanatory reading of our text who want to maintain that the reference is to Empedoclean matter. Could they halt the above regress by holding that Empedoclean matter is (at some level of analysis) parcelled out into numerically distinct parcels? The question is what might serve to diversify these parcels of Empedoclean matter. Maintaining that parcels of Empedoclean matter are diversified from each other because they are caught up in the lives of distinct organisms will not help proponents of the traditional view to respond to the regress argument; for if parcels of Empedoclean matter are diversified by the organisms whose matter they are, then they cannot in turn

\textsuperscript{90} Sheldon Cohen has argued that proponents of the prime matter doctrine can endow prime matter with an essence, just one of a more generic sort: e.g., being essentially potentially hot, cold, wet, or dry (\textquotedblleft Aristotle's Doctrine of the Material Substrate,
\textit{The Philosophical Review} 93 [1984], pp. 172-178). I find this argument implausible, because for Aristotle a specific essence is always a prerequisite for a more general one; e.g., a thing only counts as an animal if it is some more specific kind of animal. Indeed, Aristotle even describes the difference whereby one species within a genus differs from another within that genus as "an otherness which makes the genus itself other" (1058\textsuperscript{8}8).
account for the diversity of those organisms. Thus, proponents of the traditional view can respond to the regress argument by maintaining only that parcels of Empedoclean matter are diversified either a) in their own right, or b) by virtue of some diversifying principle other than the organism as a whole. The trouble with these moves, however, is that Aristotle nowhere gives us any reason to think that Empedoclean matter is so parceled out, at least not by any principle of a lower level than the life of the organism whose matter it is. On the contrary, he describes it in *Metaphysics* VII.3 as, in its own right, neither *choriston* (separable) nor a *tode-ti* (a this-something).\(^{91}\) This description seems to entail that by itself, matter is not parceled out into numerically distinct bits. Much less do we find Aristotle formulating any *principle* of diversification for bits of Empedoclean matter.

Despite its lack of textual support, however, the claim that Empedoclean matter is, at some level of analysis, parceled out into numerically distinct bits is very popular among proponents of the traditional view. After all, it seems that proponents of the traditional view can reasonably respond to the regress argument just articulated only by making this claim.\(^{92}\) And given that the textual evidence goes against maintaining that Empedoclean matter is in its own right parceled out into numerically distinct bits, it is not surprising that we find other proponents of the traditional view arguing that a principle of diversification for Empedoclean matter can be found which coheres well with Aristotle’s other views, even if he nowhere explicitly endorses it.

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\(^{91}\) See 1029\(^*\)27-29.

\(^{92}\) Unless they are willing to say that prime matter is in itself diversified, but then they will count as bare particular theorists.
One proponent of such a strategy is Loux, who argues that parcels of Empedoclean matter may be diversified by their places: “what gives us a diversity of parcels of any of the elements at a time is the fact that the parcels have numerically distinct proper places at that time.” In Loux’s view, these parcels of Empedoclean matter in turn serve as the diversifiers for individual organisms. But this view provokes many questions. First, we might wonder, why not simply maintain that individual organisms differ in their places? Why insist instead that organisms are diversified by their Empedoclean matter, which is in turn diversified by its place? If place plays the role of diversifier at one level of the material hierarchy, why should it not play that role at a higher level? One reason, of course, is textual: Aristotle’s insistence in *Metaphysics* VII.3 that Callias and Socrates differ in their matter. But philosophically, this view attributes to Aristotle an unsatisfying explanation of the diversity of Callias and Socrates, since to explain the difference in their matter by appealing to a difference of a place at a lower level of the material hierarchy puts an extra step in the explanation of diversification for which, it seems, there is no philosophical need. Why not simply maintain that two organisms falling under the same species differ in their places?

A deeper philosophical worry one might have regarding Loux’s appeal to places as the principle of diversification for the objects found in those places derives from Aristotle’s insistence on the posteriority of accidents to substances. Places, being accidents, are posterior to the substances whose places they are. Of course there is

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94 Aristotle defines the place of a thing in *Physics* IV.4 as “the innermost motionless boundary of what contains it” (212a20-21).
much more to be said about precisely what sort of priority Aristotle has in mind here, and I cannot hope to settle all the related complexities here. But one might worry about finding a sense in which places are posterior to the substances found therein if we also maintain, as Loux suggests, that parcels of Empedoclean matter differ in their places. Clearly we could not insist that substances are prior to places in the sense that a substance can exist without a place. This result, however, is not problematic but just what we should expect; for, as he points out, it is clear that Aristotle does not espouse this sort of picture of “an ontological ‘moment’ where there are masses of stuff (fire, earth, air, and water) in search, so to speak, of places to occupy.”95 Rather, sublunary substances and their places are given together; no such substance could be at all without being in a place. This is true even at the level of the four elements, the level at which, Loux argues, the diversity of organisms is ultimately explained. So the fact that Loux’s suggested picture of diversification does not allow for substances to exist independently of places is a virtue, not a vice. Whatever the sense may be in which substances are prior to places, it is not this sense. Instead, enmattered substances and their places are mutually interdependent in the sense that neither can exist without the other.

So given this mutual interdependence between a substance and its place, perhaps there is not so clearly a difficulty just in maintaining that a given substance is diversified by its place. But Loux’s suggestion has two steps: 1) Distinct organisms within the same species, such as Callias and Socrates, are distinct because they have distinct matter; and 2) The matter of each (understood as Empedoclean matter) is distinct from that of the other because these parcels of matter differ in their places. Granted, as Loux points out,

95 Aristotle’s Constituent Ontology, p. 232.
“given the totality of stuff that is the four elements, we are thereby given a rudimentary framework of places: each of the four elements, recall, has its own natural place. That rudimentary framework may be sufficient to give us the partitioning or dividing that Aristotle’s theory demands. And for the world at the level of the elements, this may indeed be so. But things are not so simple for the Empedoclean matter that serves to diversify organisms and the places of their matter. Consider an organism and the Empedoclean matter that makes up that organism. The parcels of Empedoclean matter under consideration are parcels which would not exist if the organisms whose matter they are did not exist. Matter is not self-clumping; absent the framework of organisms it would not be separated out into distinct masses. But this means that the particular place of an organism’s Empedoclean matter is, at any given moment during the life of the organism, entirely dependent upon the existence of the organism. It is the organism that causes the particular place of its Empedoclean matter to exist actually, since it is the organism that, at every moment during its life, organizes its Empedoclean matter in such a way as to have the particular boundaries that it does. Thus, independently of the framework of organisms and the places they bring on the scene, the places needed to diversify organisms on the account Loux suggests (the places of their Empedoclean matter) would exist no more than potentially. And if this is so, then the distinction between the places of organisms’ matter cannot be used to explain the distinction between organisms; the explanation must go in the other direction. The place of the Empedoclean matter of a given organism differs from the place of the Empedoclean

96 Aristotle’s Constituent Ontology, p. 232.
matter of another organism only because the organisms which cause these places to exist actually themselves differ.

So the feature whereby Loux suggests that Socrates’s and Callias’s Empedoclean matter differs, in place, is a feature that is brought into being by Socrates and by Callias. The place of each one’s matter is not determined at the level of the four elements, independently of the actual existence of the whole organism. But if this is the case, then we have what looks like a circularity worry for this account of diversification: organisms are diversified by their Empedoclean matter, and their Empedoclean matter is diversified by its place; but the place of this Empedoclean matter is made to exist actually by the organism whose diversification it is ultimately supposed to account for. This means that the place of the Empedoclean matter presupposes the existence of this organism, along with this organism’s diversity from other organisms (since it cannot exist without being diverse from other organisms). The view Loux suggests, then, ends up maintaining that the principle of diversification for a given organism, its Empedoclean matter, itself differs from the Empedoclean matter of other organisms because of a feature (its place) that presupposes the diversity of the very organism whose diversification is purportedly being explained. So this way of salvaging the traditional view from the regress argument articulated above, by appealing to place as the diversifier for the Empedoclean matter which makes up organisms (with this matter in turn serving as the principle of diversification for organisms) ultimately results in circularity. The challenge, then, for

97 One could not maintain that the place of Socrates and Callias's Empedoclean matter is decided by the places of the elements making it up, because there is good reason to think that those elements have places only potentially, not actually (since they are mixed together in the technical sense that Aristotle discusses in *On Generation and Corruption* I.10).
the proponent of the traditional view is to find an explanation of the diversity of a organism's Empedoclean matter that is independent of the diversity of the organism whose matter it is.

2.4 Critiquing the Nontraditional View

But there is another option altogether—we might hold that it is form, rather than matter, that is the principle of diversification for organisms. Does this view, which I will refer to as the nontraditional view, fare any better than the traditional view? It too faces numerous difficulties stemming from its implication that the form of each organism must be numerically distinct from that of any other organism (otherwise they could not diversify those organisms). This implication comes into conflict with a number of Aristotle’s central metaphysical views.

We can organize the main issues afflicting the view that form is the principle of diversification by giving two arguments against its presupposition that the form of each organism must be numerically distinct from that of any other organism, the first argument questioning how these forms can be, as Aristotle tells us they are, essences, and the second argument questioning how these forms can exist. To understand the first argument, note that individual members of the same species are supposed to have the same definition. But a thing’s essence is what determines its definition. If this is right, proponents of the nontraditional view can maintain only that an organism’s form endows that organism with an essence, not that it is that organism’s essence (otherwise all distinct organisms would have distinct essences).

But how could distinct forms endow individuals with the same essence? At the very least, these forms could not themselves differ in kind. For if they differed in kind,
then they would also differ in definition, since definitions are based on kinds. All the items falling under a single kind share a single definition, and if two entities differ in kind, they also differ in definition. But if the forms of distinct organisms each have their own kind and hence their own definition, this implies that distinct organisms have different definitions. This is because the definition of an organism draws upon both its form and its matter; if the definition of either form or matter differs from organism to organism, then the definition of these organisms themselves will also differ. But if this is so, if all distinct organisms have different definitions, then even cospecific organisms cannot share the same definition. Since Aristotle clearly maintains that cospecific organisms share the same definition, he therefore must maintain that the forms of cospecific organisms do not differ in kind.99

So it seems that proponents of the view that form is the principle of diversification must therefore maintain that forms of cospecific organisms are the same in kind. But this route also is closed to them. To see why, we must first note that this kind shared between cospecific organisms' forms cannot be the same one that the organisms themselves fall under, because the latter endows any item falling under it with membership in the associated species; and the form of a human being (or of whatever organism is being considered) is not itself a human being. But Aristotle gives us no indication that there are species under which the forms of organisms fall that are distinct from the species under

98 See, e.g., *Metaphysics* VII.11.

99 And in addition to this difficulty, since Aristotle maintains that it is impossible for any individual to be definable, he could not maintain both a) the thesis, implied by the view that form is the principle of diversification, that forms are just as individual as the organisms whose forms they are, and b) that each form has its own definition. For further discussion of this objection to the nontraditional view, see Loux, *Primary Ousia*, pp. 225-226.
which organisms fall. And even aside from the lack of a textual basis for such a move, positing such species for forms would run counter to Aristotle’s insistence that membership in a given species is explained by possession of the associated form, rather than the other way around. After all, Aristotle is clear that species are to be analyzed in terms of matter and form: “It is clear also that the soul is primary substance and the body is matter, and man or animal is the compound of both taken universally” (Metaphysics Z.11, 1037a5-6). Aristotle maintains that the reason Socrates and Callias fall under the human species is because each possesses a human form along with a certain sort of matter\textsuperscript{100}; to then maintain that these forms in turn count as the same in kind because they fall under a single species of their own would either a) invite the question of why these forms fall under a single species, or b) assume that their membership in the same species does not stand in need of explanation. And either way there is trouble.

Regarding the former possibility, if we must explain why these forms fall under a single species then we will have to posit a higher-order form, possessed by the forms of any and all cospecific organisms, which guarantees that these lower-order forms all fall under the same species. This seems to be the road Whiting takes when she writes:

\[\text{W}e \text{ must read Aristotle as claiming that Socrates and Callias are the same in species (or species form) and that this is indivisible. But this does not rule out the possibility that each also has his own individual form and that this individuates him from the other. For Aristotle apparently recognizes the existence of numerically distinct forms which, however, are the same in species (Met. 1071a26-29). Each of these—the individual and the species form—is one and}\]

\textsuperscript{100} This is true regardless of whether cospecific organisms are taken to possess numerically distinct forms or numerically the same form.
indivisible. But only the individual form is one and indivisible in a way which can account for the numerical distinctness of Callias and Socrates.¹⁰¹

But this move seems closed to proponents of the nontraditional view for philosophical reasons. Recall, as I have argued in chapter 2, that proponents of this view assume a constituent ontology according to which forms are understood as ontological components. Thus, if the higher-order form of the organism's form indeed merits the name of “form,” it must itself be an ontological component of the organism’s form. But what other component could an organism’s form possibly have? Certainly not a material component; but no other reasonable candidate seems available. So if the forms of organisms themselves have forms, and if, as proponents of the nontraditional view maintain, forms are to be understood as ontological components, it seems that proponents of the nontraditional view must conclude that the forms of organisms are simply identical to their higher-order forms (unless some further constituent of the forms of organisms can be found to distinguish them from their higher-order forms). In other words, proponents of the nontraditional view cannot maintain any distinction between the forms of organisms and higher-order forms after all; this distinction collapses due to constraints on the nature of form.

But if we say instead, as in the latter possibility, that the membership of two forms in the same species does not stand in need of explanation, then forms lose their explanatory role in species membership and there was no need to appeal to form in explaining why Socrates and Callias fall under the same species in the first place. But again, this runs counter to Aristotle’s view that it is because an organism has a certain

¹⁰¹ Whiting, “Form and Individuation in Aristotle,” p. 370.
form that it falls under the associated species kind, that species are to be analyzed in
terms of form and matter. So proponents of the traditional view are caught in a dilemma:
In addition to being unable to maintain that the forms of cospecific organisms differ in
kind, they also cannot maintain that the forms of cospecific organisms are the same in
kind.

To summarize the above argument, proponents of the nontraditional view cannot
account for the way in which forms are essences. These proponents face trouble whether
they take the diversifying forms of organisms to differ in kind or to be the same in kind.
If they differ in kind, then cospecific organisms cannot share the same definition,
contrary to a thesis clearly held by Aristotle. But if they are the same in kind, then either
this fact stands in need of explanation or it does not. If it stands in need of explanation,
then we must posit a shared form to underlie their sameness in kind; but proponents of
the nontraditional view cannot uphold any distinction between forms of organisms and
higher-order forms. If, on the other hand, this fact does not stand in need of explanation,
then there seems to be no good reason to hold that the membership of organisms in the
same species stands in need of explanation. After all, if the shared character of forms
requires no explanation, why should the shared character of organisms? But if we admit
that shared character does not require explanation, then form loses an explanatory role
Aristotle insists that it has. The numerically distinct forms of co-specific organisms
required by the nontraditional view, then, also cannot be seen as the same in kind. But
being the same in kind or not being the same in kind is an exhaustive dichotomy. So
there is no way, given the nontraditional view, to explain the fact that forms, as essences,
account for the shared character of the organisms whose forms they are.
A second argument which runs the nontraditional view aground concerns the issue of how we can explain the existence of multiple individual forms within one species: in particular, whether cospecific individual forms are all eternal or come to be and pass away with each organism. Suppose first that individual forms are eternal. Aristotle maintains that the world is eternal, which implies that the number of organisms which have been, are, and will be is infinite. This does not conflict with his insistence that there can be no actual infinite, since the number of organisms there are is never infinite. But given that the number of organisms that have been, are, and will be is infinite, and given that individual forms neither come to be nor pass away but are instead eternal, there will at all times be an infinite number of individual forms. This combination of views therefore conflicts with Aristotle’s insistence that there can be no actual infinite. Moreover, it conflicts with his insistence in Metaphysics VII.8 that forms, being “suches,” are not self-subsistent substances (1033b20-1034a5). If they exist eternally, then they exist apart from the substances whose forms they are; but then how could they be anything but self-subsistent substances? For these reasons Aristotle cannot maintain both a) that there is a distinct form for each individual, and b) that forms exist eternally.

What if we suppose instead that individual forms come to be and pass away with the organisms whose forms they are, so that the number of individual forms that exists is always finite and so that forms do not exist apart from composites? Unfortunately for the nontraditional view, Aristotle insists in VII.7-9 that forms neither come to be nor pass away, but are eternal, on pain of an infinite regress:

[T]o make the bronze round is not to make the round or the sphere, but something else, i.e. to produce this form in something else. For if we make the form, we
must make it out of something else; for this was assumed. E.g. we make a bronze sphere; and that in the sense that out of this, which is bronze, we make this other, which is a sphere. If, then, we make the sphere itself, clearly we must make it in the same way, and the processes of making will regress to infinity. Obviously then the form also, or whatever we ought to call the shape of the sensible thing, is not produced, nor does production relate to it,—i.e., the essence is not produced.... It is obvious then from what has been said that the thing, in the sense of form or substance, is not produced, but the concrete thing which gets its name from this is produced, and that in everything which comes to be matter is present, and one part of the thing is matter and the other form. (1033a20)

Some argue that not all parts of the middle books of the *Metaphysics* express Aristotle’s own views. However, there is every reason to think that this particular line of reasoning is his own; for we can reconstruct the motivation behind the argument from his discussion of the Paremenidean argument against the possibility of coming to be and passing away in *Physics* I.7-9. Of course, the precise interpretation of these chapters is much debated, but for our purposes here we need only rely on components of this discussion that proponents of the nontraditional view would generally accept. Anything that comes to be and passes away must meet stringent specifications to circumvent this argument. The argument insists that “none of the things that are either comes to be or passes out of existence, because what comes to be must do so either from what is or from what is not, both of which are impossible. For what is cannot come to be (because it is already), and from what is not nothing could have come to be (because something must be underlying)” (191a27-31).

Aristotle concedes that nothing can come to be from what is not, and that nothing which already is can come to be; but he insists that coming to be can still occur as long as what comes to be is made up of matter and form. Anything that comes to be must have matter which pre-exists its generation and which persists in the generated entity; the generated entity then comes to be not *ex nihilo* but out of this material component.
(precisely how matter guarantees that the generated entity does not come to be *ex nihilo* is controversial, but it is uncontroversial that the presence of matter is necessary). What is clear is that Aristotle intends the hylomorphic analysis to provide the answer to the Parmenidean paradox. But this means that if forms come to be along with the objects whose forms they are, then they too must be subject to hylomorphic analysis, which means that they must be composed of matter and form. But if this is so, then the same questions arise for these higher-order forms: are they eternal, or do they come to be and pass away? As we have seen, they cannot be eternal; but if they come to be and pass away, then they must be made of matter and form, and the same question will arise for their forms, *ad infinitum*. This objection could be circumvented if a proponent of the nontraditional view were to maintain a) that distinct organisms (even cospecific ones) have distinct forms, but also b) that the *forms* of cospecific organisms share numerically one form. But this would involve maintaining that while organisms are diversified by their forms, these forms are themselves diversified by something other than their forms (they cannot also be diversified by their form, since they share numerically one form). Moreover, this move seems clearly *ad hoc*; the only reason to posit a form of forms is to avoid the regress argument above. Forms of forms would play no other role, nor is there any textual basis for them.

We have seen two main arguments against the nontraditional view: 1) It does not account for the sense in which forms are essences (i.e., explain the sameness or difference in kind of the organisms whose forms they are); for it coheres with neither the thesis that forms are the same in species nor with the thesis that they differ in species, and 2) it coheres with neither the thesis that forms are eternal nor with the thesis that forms
come to be and pass away. Avoiding these arguments would require violating principles which are generally accepted as Aristotle’s own, such as the thesis that species membership is explained by reference to an organism’s possession of form and matter rather than the other way around. But again, my aim is not to establish these arguments as decisive; my aim is only to compile the arguments against the view that form is the principle of diversification in order to emphasize the advantages of searching for an alternate view, as I will do in the next chapter.

2.5 Textual Arguments for the Mainstream Views: A Response

Having laid out the case against each of the mainstream views, in the last part of this chapter I want to address what I take to be the most compelling textual bases for each of these views. One key text that is often emphasized by proponents of the nontraditional view is Aristotle’s claim in *Metaphysics* XII.5: “the causes of different individuals are different, your matter and form and moving cause being different from mine, while in their universal formula they are the same” (1071a26-29). We should note that this text does not even appear to support the nontraditional view that form is the *principle* of diversification; it only appears to support the view that distinct individuals have distinct forms. Nonetheless, the latter view is an important premise of the nontraditional view; if forms are distinct between distinct individuals, one obstacle to maintaining that form is the principle of diversification is removed. This text is usually interpreted as saying that distinct individuals have distinct matter, distinct forms, and distinct moving causes. But, as Loux points out in his discussion of this text, it simply cannot be taken at face value in this way; for it would have the absurd result that no two individuals could share the same
moving cause, i.e., the same father. Since it is this clear that the text cannot be saying what it seems to be saying with respect to the moving cause, we need not take it at face value with respect to form either.

The text closest to the heart of the traditional view is Aristotle’s claim in *Metaphysics* Z.8: “to d’apan eidei, to toioonde eidos en taisde tais sarxi kai ostois, kallias kai sokrates; kai eteron men dia ten ulen (etera gar), tauto de to eidei (atomon gar to eidos).” The key question is how strongly this “dia” should be interpreted. The traditional view takes *dia* here as signifying that diversity of matter explains (in a metaphysical, not merely an epistemological, sense) the diversity of organisms. But must we take the occurrence of “*dia*” here in this explanatory sense which supports the traditional view? Or might it signify instead merely that distinction in matter is a necessary and sufficient condition for distinction between organisms, and therefore not support the traditional view after all?

First, this explanatory sense is not the only way to understand *dia* here. For even if we take *dia* in its causal sense, we might take it to express simply the idea that diversity of matter is a sufficient condition for, or perhaps both a necessary and a sufficient condition for, the diversity of Callias and Socrates, *without being explanatory of their difference*. That is, Aristotle may, in this text, be using the term “*dia*” in a non-

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102 *Primary Ousia*, pp. 233-234.

103 “And when we have the whole, such and such a form in this flesh and in these bones, this is Callias or Socrates; and they are different in virtue of their matter (for that is different), but the same in form; for their form is indivisible.” (1034μ5-8)

104 Taking *dia* plus the accusative here as having causal force of some kind does seem most appropriate; for the other central ways of construing this construction, involving time or place, clearly do not apply here. However, there is still the question of how strong this causal force must be taken to be.
explanatory way, to make the point that diversity of matter is required for (and indeed perhaps sufficient for) diversity of organisms, without explaining the diversity of organisms. *Dia*, after all, is a term with a variety of precise meanings, including "with a view to" or "by reason of."105 To help illuminate the distinction between these different uses, consider the versatility of the English expression “because”: in trying to convict a burglar, a policeman might say, “This man committed the burglary because he had no money and his family was starving.” In this case, the policeman is using “because” in its genuinely explanatory sense, to explain why the man committed the burglary. But the policeman might also say, “This man committed the burglary because his fingerprints are all over the doorknob and furniture.” In this case the policeman is claiming that the man’s fingerprints being all over the doorknob and furniture is a sufficient condition for his committing the burglary (barring scenarios in which the man was framed); but he is surely not saying that this explains why the man committed the burglary.

We might support this weaker reading of *dia* here by showing that the stronger reading employed by the traditional view does not fit well with the textual context. Let us consider the context of VII.8. The focus of the entire chapter is not the nature of matter, but rather the nature of form and of the concrete object generated; nor is the issue of diversification so much as mentioned at any previous point in the chapter. Why, then, does Aristotle bring up the issue of diversification and the nature of matter so suddenly at the end of the chapter? One good explanation would be that he is trying to respond to a

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question that might arise upon consideration of the main theses which he has set down. Let us, then, try to get a clearer picture of the structure of the chapter as a whole.

The chapter can be divided into two parts: In the first, Aristotle aims to establish that forms do not come to be; rather, generation occurs only in the case of concrete things in which “matter is present, and one part of the thing is matter and the other form” (1033b19-20). The movement to the topic of the second part of the chapter is rather sudden: immediately after this sentence, he asks, “Is there then a sphere apart from the individual spheres or a house apart from the bricks?” (1033b20-21). But he does not voice any explanation of why the conclusions of the first part of the chapter might invite this new question (which he answers, of course, in the negative). Nevertheless, there is a plausible explanation for Aristotle’s transition to this issue from the concerns of the first part of the chapter. Establishing that forms neither come to be nor pass away likens them in that respect to Platonic forms, which are eternal. Aristotle raises this question because he wants to establish that although his forms are neither generated nor corrupted, they still differ from Platonic forms because, as he goes on to explain, each of his forms is “a ‘such’, and is not a ‘this’” (1033b22). (Notably, he does not answer the question by saying that distinct individuals have distinct forms, which would just as easily deflate their equation with Platonic forms.) Our key text occurs at the end of this second part of the chapter, just after Aristotle concludes, “Obviously, therefore, it is quite unnecessary to set up a Form as a pattern…; the begetter is adequate to the making of the product and to the causing of the form in the matter” (1034a2-5). That is, the only self-subsistent substance we need in order to allow for the generation of a given organism is a substance
one in form with the substance to be generated; we do not need the form itself to be self-subsistent.

Thus far, then, the chapter has established a) that in order for an object to come to be or pass away it must have form and matter, and concrete objects have this structure while forms do not; and b) that Aristotle’s forms differ from Platonic forms in that they are “suches,” not self-subsistent substances. To return to our key text, if we take dia in the weaker, non-explanatory sense, then Aristotle is asserting merely that while their form is the same, distinct organisms must have distinct matter (we cannot have the former without the latter). Given the focus of the chapter, on the nature of form and of the composite’s composition of form and matter, we might reasonably wonder at this point how many forms there are and about how the number of components maps onto the number of organisms that come into being. This weaker interpretation of dia aligns our key text with one of the main concerns of the chapter as a whole: the composition of organisms. According to the traditional interpretation of our key text, on the other hand, the dia should be interpreted as explanatory, and Aristotle ends the chapter by laying it down not only that Socrates and Callias must have different matter, but that Socrates and Callias are diversified by their matter (that their matter explains their diversity). But the issue of diversification has not so much as arisen in the chapter thus far, while the issue of composition has been a central theme.

For these reasons I read the occurrence of dia in our key text in the non-explanatory sense, and interpret the text as expressing Aristotle’s allegiance to a principle about composition discussed in the preceding chapter, the principle of constituent identity. According to this principle, no two objects can have precisely the same

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constituents arranged in precisely the same way. Socrates and Callias, being composed of form and matter, must differ in at least one of these components; and Aristotle here tells us that they differ in their matter but not in form. I take this interpretation of the text to be closer to the main concerns of the chapter than the interpretation that supports the traditional account. But at the very least, given the ambiguity of “dia” there seems to be no reason in the text itself to favor the interpretation that supports the traditional account over the one that does not; and given the difficulties I have laid out with the traditional account, there is independent reason to favor the latter over the former. The text closest to the heart of the traditional account, then, does not tell decisively in favor of that account.

2.6 Conclusion

The focus of this chapter has been on criticisms which address one, but not both, of the mainstream views. I want to close by presenting an objection that applies to both mainstream views alike, one which helps to point us in the direction of the view I will articulate and defend in the next chapter. It is clear that Aristotle did not see organisms as constructions out of more basic, independently existing entities. This is because of the nature of matter, which Aristotle nowhere describes as parceled out into independently existing, numerically distinct bits. On the contrary, he describes it in Metaphysics VII.3 as neither choriston (separable) nor a tode-ti (a this-something), and also often refers to it as a potentiality, one that calls out for the actuality of a form. Of

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106 For an argument that he does not see them this way, see Loux, “Aristotle on Matter, Form, and Ontological Strategy.”

107 See 1029a27-29.
course, the matter at issue here is not functional matter, or matter as enformed; it is matter considered in its own right, or what I have been calling Empedoclean matter. And the joining of form with Empedoclean matter endows the latter with the functional unity of a body that is diverse from other enformed bodies. Given this process, there is reason to hold that Empedoclean matter is not divided into numerically distinct parcels until the form is predicated of it and it is incorporated in the life of an organism which is distinct from other organisms. It is only when it is operated upon by form that it becomes a genuine unity (i.e., a body).\textsuperscript{108}

And form, in its turn, cannot exist except as the form of some composite.\textsuperscript{109} It seems to me that these facts about matter and form greatly undermine any prima facie temptation to reason, from the fact that difference in some constituent is necessary and sufficient for the numerical difference of a composite $x$ and a composite $y$ (i.e., from the principle of constituent identity), to the conclusion that that constituent is the principle of diversification for $x$ and $y$. For matter and form are dependent on the composite in key ways: matter depends on the composite for its unity, while form depends on some composite for its existence.

Proponents of both the traditional and the nontraditional views alike maintain that numerical diversification is a brute fact at some level (at the level of Empedoclean matter, at the level of place, at the level of form). What is to stop us from maintaining instead that the brute fact of numerical diversity lies at the level of organisms themselves? Especially given the aforementioned ways in which matter and form are

\textsuperscript{108} See De Anima II.1.

\textsuperscript{109} See Metaphysics VII.8.
posterior to the composite whose matter and form they are, this view seems to have an advantage over the mainstream views, which, as we have seen in this chapter, face significant philosophical difficulties and yield considerable conflicts with other theses that Aristotle maintains. If we can articulate a view which avoids these difficulties and aligns with the textual evidence, then we need not be forced into one of the mainstream views on diversification. In the following chapter I will argue not only that we can do so, but indeed that the view that organisms' diversity is non-derivative is supported by Aristotle's metaontological views.
CHAPTER 3:
DIVERSIFICATION AS UNDERIVED:
SUPPORT FROM ARISTOTLE'S METAONTOLOGY AND NON-REDUCTIVISM

It is clear why both mainstream views on diversification in Aristotle maintain that matter and form are non-identical components of organisms: as explained in chapter two, only with this assumption can one maintain, as both views do, that one of these components is the principle of diversification for organisms. It is also understandable why proponents of both views maintain that co-specific organisms can be distinct from each other only if either their matter or their form is distinct from the matter or form of other organisms within their species. After all, proponents of both views believe that matter and form exhaust the components of organisms, and it is difficult to see how identical components could comprise distinct organisms. Although one could argue that it is the arrangement of these identical constituents that differentiates organisms (and in fact, this would still conform to the principle of constituent identity), such a view would at the very least be an extremely revisionary version of constituent ontology. In any event, my view on diversification for Aristotle takes issue with neither of these assumptions.

What is not nearly so clear is why proponents of the mainstream views go on to conclude that either matter or form must be the principle of diversification for organisms, i.e., why either matter or form is that which must be referred to in an ultimate or complete
explanation of why an organism \( x \) is diverse from an organism \( y \). There are other possibilities here: it may be that organisms are diverse in their own right (no further principle explains their diversity), or it may even be that not only are organisms diverse in their own right, but the diversity of organisms serves as the principle of diversification for one (or both) of the components of organisms (rather than the other way around, as the mainstream views have it). Why are these other options so readily passed over, often without argument,\(^{110}\) in favor of the conclusion that one of the components of organisms is the principle of diversification for them?

The project of this chapter is to provide what I take to be some key arguments for maintaining that co-specific organisms are not diversified by either of their constituents: instead, their diversity is underived. To support this claim, we should note that both the traditional view that matter is the principle of diversification and the other mainstream view that form is the principle of diversification agree that numerical diversification is a brute fact at some level in the order of composition: the level of matter, for the traditional view; the level of form for the other view. After all, numerical diversification must be a brute fact at some level—unless one maintains that there are infinite levels of material constitution, as Aristotle certainly does not: "For...one thing cannot proceed from another, as from matter, \( ad \ infinitum \), e.g. flesh from earth, earth from air, air from fire,

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\(^{110}\) As for example in Scaltsas’s exposition of the argument: "[W]hen substances are of the same kind, their difference must rest on something other than the form, namely, matter. This is a general, a priori argument that is not restricted in application to physical matter, but would apply to any kind of matter. The argument is that if there are substances that are of the same kind, because they differ from one another, they must each consist of more than the form of that kind. Otherwise, they would not differ from each other.... Generally, the Aristotelian position is that matter, whatever it may be, differentiates substances of the same kind." See Scaltsas, *Substances and Universals in Aristotle’s Metaphysics*, p. 147.
and so on without stopping...." (994b2-4).\footnote{Indeed, Aristotle maintains that there cannot be an infinite regress in any of the four types of causation (Metaphysics II.2). And I cannot think of any view which avoids infinite regresses \textit{and also} avoids the conclusion that diversification must be a brute fact at some level of analysis. Suppose one wanted to hold that things were diversified by being in different places; this would only make sense if the places were brutally diversified, or if one were operating with a conception of space as absolute and one held that it contained points which were brutally diversified.}

My thesis simply moves this brute fact of diversification to the level of the organisms themselves. In other words, while many proponents of mainstream views maintain either that form needs no principle of diversification or that matter needs no principle of diversification, I maintain that organisms themselves need no principle of diversification—they are diverse in their own right.

However, claiming that organisms' diversity is a brute fact is, of course, only a first step toward a complete explanation of diversification for Aristotle. Moreover, it is a first step that some commentators have taken.\footnote{For example, Edward Regis, "Aristotle's Principle of Individuation"; William Charlton, "Aristotle on Identity," p. 46.} Therefore, it will be important to note two key ways in which my project differs from theirs. It differs, first, in the metaontological arguments I will offer for the view in this chapter. These arguments aim to advance the view that Aristotle sees the diversity of organisms as underived by articulating what I see as the two most convincing arguments for this view: arguments which both appeal to Aristotle's metaontology. In my view, the connections between Aristotle's metaontology and his views on diversification have not been fully appreciated. Although the two mainstream views are often taken to be at opposite ends of the spectrum, the metaontological arguments I will offer here call into question points which...
the two views have in common, thus painting an overall picture of these views as more similar than different in their fundamental (and often unstated) presuppositions.

Second, my project differs from others who have seen organisms' diversity as underived in the vision of the interrelationships between matter, form, and organism which I will go on to articulate in the next chapter. There I will argue that we should see matter as, for Aristotle, diversified by the organism whose matter it is (precisely the reverse of the traditional view), while form remains a principle shared by distinct co-specific organisms (contrary to the nontraditional view). Further, I will argue that this vision of hylomorphism, supported by key texts in the *Metaphysics*, remains both true to the diversity of organisms as underived and true to a constituent ontological understanding of hylomorphism.

3.1 Diversification as Underived: Support from Aristotle's Metaontology

The project of the first section of this chapter will be to argue that Aristotle's metaontology provides strong reasons for rejecting both mainstream views in favor of the opposing view that diversity for co-specific organisms is underived or basic. As such, their diversity does not admit of explanation in terms of anything else. In particular, I will argue that maintaining that the diversity of organisms is derived from the diversity of one of their components violates one of two key theses of Aristotle's metaontology.

To set the stage for this argument, we must begin with an exploration of Aristotle's basic ideas about being and unity, the core theses of his metaontology. While the precise meaning of Aristotle's metaontological theses about being and unity has been the focus of much scholarship throughout the ages, less attention has been devoted to the implications of these theses for the parallel concept of diversity. It is these implications, I
will argue, which undermine the mainstream views. In outline, my central argument in this section will proceed as follows: Aristotle's metaontology tells us that a) "one" is an incomplete schema that must be filled out by reference to some kind (whether genus or species), with the most fundamental expression of a substance's unity referring to that substance's species, and that b) the concept of diversity should be understood as parallel to the concept of unity. Therefore, claims of diversity likewise require reference to a genus or species, with the most fundamental expression of a substance's diversity from other substances referring to its species. I will argue that both mainstream views, however, break this parallel Aristotle wants to maintain between unity and diversity, since both explain the diversity of co-specific organisms by reference to a constituent the unity and diversity of which is determined independently of any species.

While ontological questions ask what there is, metaontological questions ask what it is to be. The Quinean answer to the latter question is: “[t]o be assumed as an entity is, purely and simply, to be reckoned as the value of a variable”; or as Gottlob Frege has put it, “Affirmation of existence is in fact nothing but denial of the number zero.” Peter van Inwagen clarifies this point: “the statement that “Fs exist” means that “[t]he number

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113 Although "one substance" or "one animal" does express a level of unity had by, say, a horse, "one horse" gives the fullest or most fundamental expression of the horse's unity.

114 Denying this parallel creates, I will argue, deep philosophical difficulties, so we have support for maintaining it even independently of Aristotle's textual insistence upon it.


Aristotle likewise ties being to unity, so closely, in fact, that to be for Aristotle just is to be one; but his metaontology involves a further claim that Quine's does not. Aristotle often repeats the thesis that being is "said in many ways." This thesis has been subject to a variety of interpretations with varying implications. I want to focus on just one implication of it. According to this thesis, there is no such thing as just plain being; put another way, to be is not the same for all the things there are. For Aristotle, "being," taken by itself, does not express a complete concept. After all, he tells us, unity and being go hand in hand, and as we read in *Metaphysics* XIV.1, to be one is always to be one under some count-noun: "‘One’ evidently means a measure. And in every case it is some underlying thing with a distinct nature of its own" (1087b33-34).

Whenever we count "one," it is always one human being or one dog (or at more generic levels, one animal or one color); "one" must always be supplemented with a count-noun expressing a kind. The same, then, is true for "being": there is no such thing as just plain "being," but rather "being a human being" or "being a dog" (or, at more generic levels, "being an animal" or "being a color"). Aristotle explains the thesis in more detail in *Metaphysics* X.2:

> [W]e must also ask in general what unity is, as we must ask what being is, since it is not enough to say that its nature is just to be unity or being.... Therefore if all existent things were colours, existent things would have been a number, indeed, but of what? Clearly of colours; and the 'one' would have been a particular 'one', e.g. white. And similarly if all existent things were tunes, they would have been a

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118 See, e.g., *Metaphysics* IV.2: “unity is nothing apart from being” (1003b31).

119 See *Metaphysics* IV.2 for an explicit discussion of this thesis.

120 See, for example, *Metaphysics* IV.2 (1003b23), *Metaphysics* VII.16 (1040b17-20).
number, but a number of quarter-tones, and their substance would not have been number; and the one would have been something whose substance was not the one but the quarter-tone.... And the same argument applies to all other classes. Since, therefore, while there are numbers and a one both in affections and in qualities and in quantities and in movement, in all cases the number is a number of particular things and the one is one something, and its substance is not to be one, the same must be true of substances; for it is true of all cases alike. That the one, then, in every class is a definite thing, and in no case is its nature just this—viz. unity, is evident; but as in colours the one itself which we must seek is one colour, so too in substance the one itself is one substance. (1053\textsuperscript{b}27-1054\textsuperscript{a}12)

This passage makes two points about Aristotle's metaontology which are key for our purposes here:

1) Just as there is no such thing as being \textit{simpliciter}, neither is there any such thing as unity \textit{simpliciter}; "one," taken by itself, is an incomplete schema that must be filled out by a species or genus within one of the categories. (Whenever we count "one," it is always one "something": one quality, one color, one substance, one animal, one man, etc.)

2) The most \textit{fundamental} expression of a substance's unity refers to its species; its less determinate forms of unity (genera) are parasitic on its most determinate form of unity (species). (Although we can count one "substance" or one "animal," there is no such thing as just being a "substance" or just being an "animal." The unity of an "animal" is more fully expressed by reference to its species.)

After all, as Aristotle tells us in the above passage, if all that existed were colors, the "one" would not have been one color in general, but one \textit{particular} color; if all that existed were tunes, the "one" would not have been one tune in general, but rather a particular tune: say, a quarter-tone. Therefore, to fill out the incomplete schema "one" in the most \textit{fundamental} way, we must follow one of the categories all the way down to its
most determinate level: within quality, we proceed all the way down to the unity of a fully determinate quality, e.g. a shade of "whiteness,"\textsuperscript{121} and at this point we can go no further. This is the level at which unity is ultimately determined. Just so, Aristotle invites us to conclude, we give the most complete account of the unity of a \textit{substance} (the category of key concern for my project here) by proceeding all the way down to the fully determinate level of "human being" or "horse," just as we read in \textit{Categories} 5: "For if one is to say of the primary substance what it is, it will be more informative and apt to give the species than the genus. For example, it would be more informative to say of the individual man that he is a man than that he is an animal" (2\textsuperscript{b}9-12). He continues by giving an example from the category of substance: "in 'one man' nothing more is predicated than in 'man', just as being is nothing apart from substance or quality or quantity; and to be one is just to be a particular thing" (1054a16-18).

So although we can, of course, count "substances" or "animals," these more generic terms do not express the fundamental unity of the items we are counting—this is expressed by the species. After all, as Aristotle emphasizes in \textit{Metaphysics} VII.13, "if man and such things are substances...none of the elements in their formulae is the substance of anything, nor does it exist apart from the species or in anything else; I mean, for instance, that no animal exists apart from the particular animals" (1038\textsuperscript{b}30-33). Rather, the ways of being a substance are being a horse, being a dog, being a geranium, being a human being, etc.; and to be one human being is irreducibly different from to be one, say, horse. The unity associated with the category \textit{substance} is a generalization of

\textsuperscript{121} Here I mean to leave open the contested question from Aristotle's \textit{Categories} of whether the things in but not said of other things are universals or particulars.
the fundamental unities associated with the different substances there are, whose natures are determined by their substance kinds. As Aristotle puts it quite strongly:

"For not only must the common nature attach to the different things, e.g. not only must both be animals, but this very animal must also be different for each (e.g. in the one case horse, in the other man), and therefore this common nature is specifically different for the two things. One then will be in virtue of its own nature one sort of animal, and the other another, e.g. one a horse and the other a man. This difference then must be an otherness of the genus. For I give the name of 'difference in genus' to an otherness which makes the genus itself other" (1058a1-8).

We should not think of "animal" as "something apart from the individuals" (1033b27-28)—as a prior category in which both horses and men participate, in Platonic fashion, and which explains their similarities. This would give the category "animal" priority over the species (and the individuals). Rather, we should think of "animal" as a generalization from the species that leaves out the specific differences between horses and men, making the species prior to the genus—just as we think of the species as a generalization that leaves out the individual differences between begetter and begotten:

And the whole...Callias or Socrates, is analogous to this bronze sphere, but man and animal to bronze sphere in general.... In some cases it is even obvious that the producer is of the same kind as the produced (not, however, the same nor one in number, but in form), e.g. in the case of natural products (for man produces man), unless something happens contrary to nature, e.g. the production of a mule by a horse. And even these cases are similar; for that which would be found to be common to horse and ass, the genus next above them, has not received a name, but it would doubtless be both, as the mule is both. Obviously, therefore, it is quite unnecessary to set up a Form as a pattern...the begetter is adequate to the making of the product and to the causing of the form in the matter. (1033b24-1034a2).

So while there is always a better account of the unity at more generic levels (e.g., we specify the unity of a "substance" more fully if we go on to identify its species), there is not likewise a more precise account of the unity found at the level of the species. The
most determinate kind of unity an individual has is the unity of its species, which is imparted by its form. Specific unity is fully determinate, i.e. not further divided beneath the specific level (as the genus is further divided beneath the generic level). The endeavor of specifying a substance's unity, then, bottoms out at the level of its species. The upshot is this: there is no such thing as just plain unity, and since the deepest account of a substance's unity is the expression of its unity under its species, there can be no account of a thing's unity at any lower level than the level of its species.

On this point neither proponent of one of the mainstream views on diversification meets with any trouble; for neither view holds that there can be a lower-level account of a thing's unity than that which refers to its species. The trouble comes when we find, as I will now argue, that unity and diversity are parallel concepts, and indeed that Aristotle himself emphasizes this point. If this is so, then just as the account of a thing's unity bottoms out at the level of the species, so the account of a thing's diversity bottoms out at the level of the species. Denying this thesis and maintaining that the account of a thing's diversity reaches beneath the specific level results, as we will see, in a dilemma that violates one of the two key points of Aristotle's metaontology just articulated: either 1) the point that "one" is an incomplete concept requiring supplementation by a kind (genus or species), or 2) the point that the most fundamental expression of a substance's unity refers to its species.

\[122\] Granted, there is an important sense in which referring to a horse's matter and form explains the existence of that particular horse as distinct from other horses, but this is a different type of explanation; it does not further explain the unity which that horse shares with all other horses in the way that giving the species specifies the unity of a "substance" or an "animal."
So how do these points about unity connect with our worry about diversification? It is a constraint shared by any metaontological theory that diversification presupposes unification. After all, it only makes sense to talk about the diversity of things each of which is antecedently unified, and only to whatever degree each thing counts as a unity (since certain metaontological theories allow for degrees of unity). So unity and diversity are conceptually tied together, but unity holds primacy; after all, there could be one without many (the Parmenidean vision is at least coherent), but there could not be many without one: for if there are many, they are many ones; diverse things are different ones. Avicenna seems to reflect this point when he writes, “plurality requires that it be understood that it derives from unity, because it is in itself an effect of unity.”123 Jennifer Whiting likewise explains:

[M]atter has to make up one thing before it can be the same as (or different from) another individual at a time. It also has to make up one thing at each of \( t_1 \) and \( t_2 \) in order for it to be the same (or a different) thing at each of \( t_1 \) and \( t_2 \). In a way, this priority of unity should be obvious. For we are asking when one individual (i.e., a unity) is the same as or different from other individuals (i.e., other unities) both at and across times. There is thus a conceptual connection between unity and individuation....124

Given that diversification presupposes unification in this sense, that it must be the diversification of things each of which is unified, it follows that one's theory of diversity must reflect one's theory of unity. That is, if we take unity to be said in many ways, we must also take diversity to be said in many ways: for if a category-neutral sense of diversity were admitted, it would be a diversity of category-neutral unities, which cannot

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124 Whiting, “Form and Individuation in Aristotle,” p. 362. Again, she uses the term "individuation" to refer to what I call "diversification."
be if being is said in many ways. We cannot maintain an Aristotelian view of unity and a Quinean view of diversity, or vice versa.

We should not be surprised, therefore, to find Aristotle maintaining that just as there is no such thing as unity *simpliciter*, there is likewise no such thing as diversity *simpliciter*: rather, "diverse" is an incomplete schema which requires supplementation in just the way "one" does. Aristotle explicitly makes this connection between unity and diversity in *Metaphysics IV.2:*

> [T]he other and the dissimilar and the unequal, and everything else which is derived either from these or from plurality and unity, must fall within the province of the science above-named [the science of being *qua* being].—And contrariety is one of these concepts, for contrariety is a kind of difference, and difference is a kind of otherness. Therefore, since a thing is said to be one in many ways, these terms also will be said in many ways. (1004a18-23)

Diversity, like its parallel concept of unity, is said in many ways; just as "one" is an incomplete schema that must be supplemented with a genus or species, so "diverse" or "different" is an incomplete schema that must be supplemented with a genus or species that is shared by the two items which differ. Aristotle clarifies this in *Metaphysics X.3:*

> "that which is different from anything is different in some respect, so that there must be something identical whereby they differ. And this identical thing is genus or species; for all things that differ differ either in genus or in species" (1054b25-28). Likewise, just as it would be misguided to try to account for the unity found at the level of the species by appeal to a unity found at some lower level, since the fullest expression of a thing's unity occurs at the level of the species, the parallel point must hold for diversity: the fullest account that can be given of a thing's diversity from something else likewise occurs at the level of the species. It is misguided to explain the diversity of two co-specific organisms
by reference to diversity beneath the specific level, e.g., to their matter or to their form. This is the point at which trouble arises for proponents of the mainstream views, for this is precisely what proponents of the mainstream views do: they hold that an organism's diversity is not determined at the level of that organism's substance kind but rather at the lower level of that organism's matter or form.

To see more precisely how accounting for a substance's diversity by appeal to the lower-level diversity of its matter or of its form conflicts with Aristotle's metaontology, suppose we ask the proponent of either mainstream view what, on their view, accounts for the *unity* of their proposed diversifier (whether matter or form). A dilemma ensues. Proponents of the mainstream views cannot understand their proposed diversifier for organisms as deriving its unity from the species-level unity of the organism whose diversity it is supposed to account for. After all, they must maintain that this diversifier (matter for the traditional view, form for the other view) has its diversity independently of that organism, since it serves to diversify that organism from other organisms; and given that diversity presupposes unity, if the diversifier (matter or form) is diversified independently of the organism it also must be unified independently of the organism. Therefore, given either mainstream view, the unity had by the diversifier clearly cannot be derived from the species-level unity that characterizes the organism.\(^{125}\)

But then there are two possible accounts of the unity of the diversifier that remain, both of which leave the mainstream views in trouble. First, if the diversifier has a kind of unity which is determined independently of *all* the kinds (genera as well as species)

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\(^{125}\) That is, proponents of the mainstream views are committed to a genuinely explanatory answer to the question of why Socrates is a different human from Callias: "Socrates is a different human from Callias *because* he has different matter/form from Callias," rather than the other way around.
within the category, this violates the first key claim of Aristotle's metaontology. It contradicts Aristotle's view that "one" is an incomplete schema requiring supplementation by some kind term within one of the Aristotelian categories, implying that there is such a thing as unity *simpliciter*. Second, if the diversifier has some more generic level of unity, such as the unity of "animal" or "substance," *without* also having unity at the specific level, this violates the second key claim of Aristotle's metaontology: it violates Aristotle's insistence that an item's unity at any more generic level within a category must be anchored in unity at the level of the species.

We can articulate the same dilemma for the mainstream views in terms of diversity rather than unity. Suppose we ask proponents of the mainstream view how their proposed diversifier is itself diversified. First, proponents of the mainstream views cannot, on pain of circularity, understand their proposed diversifier for organisms (be it matter or form) as diversified by the organism whose diversity it is supposed to explain. But then there are two possible accounts of the diversity of this diversifier that remain, each of which violates the parallel between unity and diversity.

First, if the diversifier (parcels of matter or individual forms) is diversified independently of all the kinds, genera as well as species, within the category (either having this diversity in its own right, or being diversified by something else which is diversified independently of any kind in the category), this breaks the parallel between unity and diversity by violating Aristotle's view that "all things that differ differ either in genus or in species" (1054b\textsuperscript{27}-28). It implies instead that, unlike the case of unity, there is such a thing as diversity *simpliciter*. Second, if the diversifier is diversified at some generic level, e.g. into "substances," *without* each of these substances also counting as
specifically diverse (different in species) from some item(s) of another species, this also breaks the parallel between unity and diversity. After all, according to our second key point of Aristotle's metaontology, unity at higher levels is always anchored in specific unity; there is no such thing as an animal or a substance that falls under no kind at the species level. So, in parallel, \( x \) and \( y \) cannot count as diverse, say, *substances* unless each also differs in *species* from some item \( n \) (\( n \) here may be identical to \( x \) or to \( y \), or identical to neither).\(^{127}\)

According to my interpretation, then, just as Aristotle holds that the unity conferred by membership in a species is fundamental, not to be explained in terms of unity at some lower level, he likewise holds the parallel thesis for diversity: that there is no lower-level answer to the question of what makes Socrates a different human from Callias. Their diversity is underived. Maintaining the contrary, as both mainstream views do, violates one of the two key claims of Aristotle's metaontology: either 1) the claim that "one" (and hence "diverse") is an incomplete schema that requires supplementation by some kind term within one of the Aristotelian categories, or 2) the claim that unity at any level higher than the level of the species must always ultimately be anchored in unity at the level of the species. Rejecting the mainstream views and maintaining that diversity for organisms is underived, or in other words that diversity,

\(^{126}\) Or, to account for the possibility of there not being any items of another species, we could say instead: *possibly* diverse from some item(s) in another species. Aristotle, of course, would assume that there must always be items in a differing species, and so would have no need for this qualification.

\(^{127}\) Note that the lowest level object that counts as a "human" or an "animal" is the level of the individual human being. So one cannot posit a lower-level category of, say, diverse "human material" to avoid these arguments—that just is positing diversity independent of the category, which extends no lower than the level of the individual human. One also, clearly enough, cannot respond by adding a new "species" for human matter to fall under (distinct from the human species), because then that human matter could not be part of an object falling under the human species (just as a dog cannot be part of a human being).
like unity, is decided at the level of a thing's substance kind, allows us to maintain both key claims of Aristotle's metaontology.

3.2 Diversification as Underived: Aristotle's Metaontology and the Fundamental Reality of Organisms

The project of the second part of this chapter will be to highlight a second advantage of my view that diversification is a brute fact, an advantage which connects with Aristotle's aim to establishing the reality of organisms, despite their materiality and susceptibility to generation and corruption. According to Aristotle’s hylomorphism, organisms are genuine substances—genuine realities.128 We find this thesis established as early as the Categories, grounded in his notion of substance, when Aristotle states, "A substance—that which is called a substance most strictly, primarily, and most of all—is that which is neither said of a subject nor in a subject, e.g. the individual man or the individual horse" (2a13-15). His opponent here is the Platonist who maintains that it is the universal, the generic, and the indeterminate, not the particular, that is the fundamental locus of reality. In Physics II he echoes the fundamental reality of organisms, this time in terms of nature:

By nature the animals and their parts exist, and the plants and the simple bodies (earth, air, fire, water).... All the things mentioned plainly differ from things which are not constituted by nature. For each of them has within itself a principle of motion and of stationariness.... Things have a nature which have a principle of this kind. Each of them is a substance.... (192b7-9).

128 After all, the word "ousia" (usually translated as "substance") derives from the verb einai, to be.
It is not, as certain Presocratic physicist views may imply, only the lowest-level elements which count as genuine realities. Rather, it is by nature that not only the parts of animals, but also the animals themselves exist.

But does Aristotle's hylomorphic picture of organisms create trouble for his insistence on the irreducible reality of organisms? Does it imply that it is only the reality of these constituents, rather than the reality of organisms, that is fundamental? It does, I will now argue, if we understand the hylomorphic vision to be committed to either matter or form as the principle of diversification for organisms. If we avoid this assumption, we can maintain both the irreducible reality of organisms and the hylomorphic view of organisms. To explain why, it will be helpful to begin by pointing out cases of constituent ontology which clearly do run into precisely this reductive difficulty.

We have seen, in the previous section, that Aristotle takes unity to be fundamentally connected to being. This bare connection between unity and being (without the further claim that both are said in many ways) is often shared or at least presupposed by contemporary, ancient, and even modern metaphysicians as well, who tend to maintain that if a whole is less unified than its constituents, then it will be less real than them as well. In fact, the contemporary bundle theorist D.C. Williams explicitly admits that, on his view, the only genuine realities are his ultimate constituents, and bases this conclusion on the premise that all other objects are composed of a plurality of them: “They not only are actual but are the only actualities, in just this sense, that whereas entities of all other categories are literally composed of them, they are not in general composed of any other sort of entity.”129 His presupposition here is that composition

129 Williams, “The Elements of Being,” p. 60.
always depletes reality, so that any object composed of other objects is either not real at all, or at least not as real as the objects which compose it.

David Armstrong, who espouses a version of bare particular theory according to which the fundamental universals are those needed by total science, maintains a very different view, but with the same ultimate result:

There seem to be reasons…to think that physics is the fundamental science. If that is correct, then such properties as mass, charge, extension, duration, space-time interval, and other properties envisaged by physics may be the true monadic universals. Spatiotemporal and causal relations will perhaps be the true polyadic universals. If this is correct, then the ordinary types—the type red, the type horse, in general, the types of the manifest image of the world—will emerge as preliminary, rough-and-ready, classifications of reality…. Many of them will be family affairs, as games appear to be. To the one type will correspond a whole family of universals and not always a very close family. And even where the ordinary types do carve the beast of reality along its true joints, they may still not expose those joints for the things that they are.  

Most ordinary objects, on such a view, lack fundamental reality; they do not, as Armstrong puts it, "carve nature at the joints." In the modern sphere, George Berkeley maintains that the fundamental properties are perceptual properties, reducing abstract ideas of many ordinary higher-order objects to mere compilations of perceptual properties. We find this conclusion also in the ancient Democritean view that the ultimate description of the world is to be given in terms of atoms and their swervings in


131 “…the mind having observed that Peter, James, and John resemble each other in certain common agreements of shape and other qualities, leaves out of the complex or compounded idea it has of Peter, James, and any other particular man, that which is peculiar to each, retaining only what is common to all; and so makes an abstract idea wherein all the particulars equally partake…. And after this manner it is said we come by the abstract idea of man or, if you please, humanity, or human nature, wherein it is true there is included color…. So likewise there is included stature…. And so of the rest." (George Berkeley, A Treatise Concerning the Principles of Human Knowledge, ed. [Rockville, MD: Arc Manor, 2008], pp. 12-13.)
the void; these are the only true realities. The same features of the primary constituents (their shape, position, and order) account for all the features of the objects they compose.

Aristotle, as we have seen in the passages given above, wants to reject any such reductive vision of organisms. However, if he espouses one of the mainstream views on diversification, it seems that he cannot entirely overcome reductivism. This is because the mainstream views hold that, at any time $t$ during the existence of an organism $O$, what makes that organism distinct from other organisms at $t$ is the diversity of $O$'s matter or form from the diversity of other organisms' matter or form. If the mainstream views are correct, then, the diversity of one constituent of organisms, whether it be matter (as on the traditional view) or form (as on the other mainstream view), must be prior to the diversity of the organism at every moment during which the organism exists; it can be neither posterior to nor coeval with the diversity of the organism. It cannot be posterior because, if the mainstream views held that that which diversifies an organism was itself diversified by the organism (or by any other item $n$, where $n$ gets its diversity from the organism), so that the diversifier for organisms had its diversity posterior to the diversity of the organism, they would face a circularity: the diversifier for an organism would, in turn, derive its diversity from that organism. And the diversifier for an organism cannot have its diversity coeval with the diversity of the organism, because then the organism could not be diversified by it (rather, both would be diversified by some other source). So according to both mainstream views alike, at least one constituent of organisms, whichever serves as the diversifier for organisms, must have its diversity prior to the diversity of the organism.
But as I have argued in the preceding section, diversity presupposes unity in the sense that \( x \) and \( y \) can only count as diverse if each of \( x \) and \( y \) is a unity. Diversity and unity go hand in hand. This means that if the diversity of a constituent is prior to the diversity of the organism, then the unity of that constituent must likewise be prior to the unity of the organism. And this is the point at which trouble arises for the mainstream views. For if the unity of one of an organism's constituents is prior to the unity of that organism, the unity of the organism is thereby threatened. At best, the unity of the organism loses its fundamentality as a result of the hylomorphic analysis (since one constituent has a prior and hence more fundamental unity); at worst, we have a violation of Aristotle's dictum that "no substance is composed of substances" (1041a4-5). After all, if matter or form has its unity and diversity prior to the organism, it is difficult to see how it could avoid counting as a substance in its own right. Of course, there are various ways a proponent of either mainstream view might try to respond to this charge. However, if we avoid the presumption that the unity and diversity of matter or form must be prior to the unity and diversity of the organism, then the dilemma does not even arise. If the unity and diversity of matter and form are either posterior to or coeval with the unity and diversity of the organism, the fundamentality of the organism's unity is not threatened.

To summarize the argument of this section, because of the sense in which the unity of a constituent must be prior to the unity of the organism on the mainstream views, these views are brought closer in a key respect to reductive versions of constituent ontology like those just examined, on which the constituents are the only realities, the only things that "carve nature at the joints." And we can avoid this difficulty entirely if we deny that organisms are diversified by one of their constituents. For on such a view,
we need not hold that either constituent of organisms has its diversity prior to the organism itself, giving the organism a level of primacy it cannot attain on either mainstream view.

Of course, one could consistently adopt the central claim of this chapter, that organisms have their diversity non-derivatively, but still maintain that one of either matter or form has its diversity prior to the diversity of the organism. Such a view would maintain a presumption of the mainstream views on diversification, but deny the central claim of each. My only claim in this section is that such a view, like the mainstream views, remains open to a key objection regarding the irreducible unity of the organism, and maintaining, as I have argued, that the diversity of organisms is underived opens the door to denying that either constituent has its diversity prior to the organism, thus avoiding this objection. This door remains closed to proponents of both mainstream views, which are committed to seeing the diversity (and hence unity) of a constituent of organisms as prior to the diversity (and hence unity) of the organism. Furthermore, this door opens into a stronger vision of the primacy of the organism than we find on many other versions of constituent ontology, both ancient and contemporary.

3.3 Conclusion

But the question that now presents itself is: in what way might one understand the diversity of matter and form, so that neither has its diversity prior to the process that generates the organism? In the following chapter I will propose a vision of the matter/form/organism relationship which meets this criterion. On the view I will articulate, the diversity of matter is posterior to the diversity of the organism, while the diversity of form is equal in priority, or coeval, with the diversity of the organism. And
since unity and diversity go hand in hand, the same holds for unity. Moreover, this vision
will also return to the main concern of chapter two and show that the constituent
ontological presupposition of the mainstream views does not stand or fall together with
these views: we need *not* reject a constituent ontological understanding of hylomorphism
in order to reject the mainstream views on diversification and maintain that the diversity
of organisms is underived or basic. Indeed, we can find textual and philosophical
motivation for a constituent ontological vision of Aristotle's hylomorphism according to
which diversity for co-specific organisms remains underived. And this is a vision
according to which neither constituent has numerical diversity prior to the process which
generates the organism, contrary to the implication of the mainstream views.
CHAPTER 4:
MAINTAINING CONSTITUENT ONTOLOGY WITH UNDERIVED DIVERSIFICATION

In the preceding chapter, I have argued that Aristotle's metaontology gives us strong reasons to maintain that the diversity of organisms is underived; I have also argued that if we maintain the diversity of organisms to be underived, we thereby avoid commitment to the thesis that the unity and diversity of a constituent of an organism is prior to the unity and diversity of that organism, unlike proponents of the mainstream views on diversification. And avoiding commitment to such priority of a constituent of organisms avoids a key objection that faces the mainstream views on diversification: the objection that the unity of organisms is no longer irreducible or fundamental. In my view, then, as long as we avoid a vision of hylomorphism according to which some constituent's unity is prior to the unity of the organism, the fundamental unity of the organism is not threatened.

Some commentators, however, have argued that a constituent ontological hylomorphism in itself undermines the unity of organisms, regardless of whether the constituents are taken to have unity prior to the unity of organism. My aim in the first section of this chapter will be to show that given the key claims of Aristotle's metaontology discussed in the preceding chapter, their objections, as they stand, do not succeed. It is only if we supplement them, strengthening them into a version of the
objection given in the second section of the preceding chapter, that the arguments are forceful. Section one thus clarifies that, despite certain commentators' claims to the contrary, it is not constituent ontology in itself, but only a constituent ontology committed to the prior unity of some constituent, that undermines the unity of its composites.

However, one might wonder: can we articulate a positive picture of how we might view the relationships between matter, form, and organism so that the organism's unity is never posterior to that of its matter and form? Such a view of organisms would necessarily be committed to the thesis that an organism's diversity is underived (although, as noted in the previous chapter, the reverse implication does not hold). One way to do so, clearly enough, would be to reject a constituent ontological hylomorphism altogether and maintain instead that organisms are unanalyzable unities. But does rejecting the prior unity of either constituent of an organism commit one to rejecting also the key presupposition of the mainstream views, the presupposition of a constituent ontology? The aim of the second section of this chapter will be to argue that it does not by proposing my own outline of the relationships between matter, form, and organism—a view which avoids the prior unity of either matter or form, yet retains the central constituent ontological thesis that matter and form are non-identical components of organisms. If constituent ontologists were committed to some constituent of organisms being prior in unity and diversity to the organism, the objection discussed in the previous chapter would tell against constituent ontology as well as against the mainstream views of diversification in Aristotle. I will argue, however, that constituent ontologists are not committed to the priority of the unity and diversity of either constituent to the unity and diversity of an organism by appealing to the analogy Aristotle explores in the middle
books of the *Metaphysics* between matter, form, and organism, on the one hand, and genus, differentia, and species on the other.

Using this analogy, I will lay out a view which ensures that an organism's matter and form never count as *prior* unities, but which is still compatible with the claim that matter and form are non-identical constituents of organisms (a claim which I argued, in chapter two, that we might fittingly view as falling under the constituent ontological strategy). Therefore, we can articulate a version of hylomorphism, one supported by key Aristotelian texts, that maintains the priority of the unity and diversity of the organism to that of its constituents *and* that remains compatible with a constituent ontological understanding of hylomorphism.\(^{132}\)

4.1 An Objection to Constituent Ontology?

Interestingly, among those commentators who reject a constituent ontological interpretation of hylomorphism, the key objection seems to be the one discussed in the section two of the preceding chapter: the objection that constituent ontology compromises the unity Aristotle insists that organisms have. In the first section of this chapter, I want to look at their formulations of this argument and show that it is not constituent ontology *per se* that is at fault; rather, it is the presumption that the unity and diversity of some *constituent* of organisms is prior to the unity and diversity of organisms.

\(^{132}\) ...at least in the way that I have characterized the constituent ontological strategy in chapter two. However, my central claim is that the view I articulate in this chapter retains the claim that matter and form are non-identical components of organisms.
Let us begin with Mary Louise Gill's compelling articulation of the objection to a constituent ontological understanding of an organism's unity:

The critical question, whose answer decides the status of composites, is the nature of that material presence. If the preexisting matter persists in the product as the same particular stuff, then the generated composite fails to be a definable unity because, in specifying what the composite is, two distinct items need to be mentioned—the form that identifies the composite, and the matter in which the form is realized.133

Theodore Scalsas echoes this objection:

The paradigmatic unity, namely, substantial unity, is not compatible with being a plurality of many. The nature of such a unity is the question with which Aristotle is concerned in the middle books of the *Metaphysics*. It is not sufficient for him to find a respect in which the many components of a substance are one, if this leaves the substance being a plurality of many.134

This is an objection that we need to answer. For in addition to accusing constituent ontology of undermining the unity of organisms, there is another difficulty this objection raises given my thesis about diversification. If diversity presupposes unity, as discussed in the previous section, then a thing's diversity can only be primitive if its unity is primitive. So if Gill and Scalsas are correct that a constituent ontological understanding of hylomorphism undermines the irreducible unity of organisms, then the view that the diversity of organisms is underived is not compatible with a constituent ontological vision of those organisms.

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I will now argue that all that is at fault here is the bare presumption that the unity and diversity of some constituent is prior to the unity and diversity of the organism—not the fundamental claims of a constituent ontology (that organisms are composites of non-identical components which account for the character of those organisms). Given the key claims of Aristotle's metaontology discussed in the previous chapter, we already have the beginning of a response to Gill's and Scaltsas's objection; for both of their formulations of the objection gloss over a key point of Aristotle's metaontology. Since "one" is an incomplete schema requiring supplementation by a kind, with the same being true for "diverse," it cannot be a fully perspicuous articulation of the objection to say either that "the generated composite fails to be a definable unity because, in specifying what the composite is, two distinct items need to be mentioned" or that "[i]t is not sufficient for him to find a respect in which the many components are one, if this leaves the substance being a plurality of many." Rather, one must say, "the generated composite fails to be definably one human being (or horse, or oak tree, or whatever the species may be) because, in specifying what the composite is, distinct matter and form need to be mentioned" or "it is not sufficient for him to find a respect in which the many components are one human being, if this leaves the human being being a plurality of diverse matter and form."

But presented in these fully articulated ways, the objections already lose some of their prima facie force. It becomes clear, at the very least, that more details about the way in which matter and form compose an organism would be needed to definitively

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135 Gill, Aristotle on Substance: The Paradox of Unity, p. 85.
136 Scaltsas, Unity, Identity, and Explanation in Aristotle's Metaphysics, p. 5.
show that that organism's being composed of form and matter threatens the unity of that organism. The *prima facie* force of these objections, in my view, comes from our tendency to either understand them in terms of a Quinean view of unity as a complete concept, or else to supplement the same term in all the phrases requiring supplementation: e.g., "it is not sufficient for him to find a respect in which the many components are one *substance*, if this leaves the *human being* being a plurality of *diverse substances.*" But Aristotle clearly would not supplement the phrases in such a way; he affirms that "no substance is composed of substances" (1041ª4-5). So given the key claims of Aristotle's metaontology, these objections do not yet hold weight against a constituent ontological understanding of hylomorphism. More argument is needed to make the case against constituent ontology; we cannot appeal, as do Scaltsas and Gill, to *unity and diversity simpliciter.*

Indeed, we might see the objection discussed in the second section of chapter four, the objection that the unity and diversity of a constituent of an organism cannot be *prior* to the unity and diversity of that organism, as a strengthened version of Gill's and Scaltsas's objections. For if we were to supplement their words accordingly, Scaltsas's argument, in generic form, would become: "the generated composite fails to be a definable unity because, in specifying what the composite is, two *prior unities* need to be mentioned," and Gill's argument would become: "[i]t is not sufficient for him to find a respect in which the many components are one, if this leaves the substance being a plurality of *prior unities.*" These objections, even when articulated merely in generic form, are still more forceful than Scaltsas's and Gill's original objections. More importantly, unlike Gill's and Scaltsas's original formulations of the objection, they no
longer lose this forcefulness under a disambiguation of the word "unity" sensitive to the nuances of Aristotle's metaontology: "the generated composite fails to be *definably one human being* (or horse, or oak tree, or whatever the species may be) because, in specifying what the composite is, distinct *matter and form, with unity prior to the composite's unity*, need to be mentioned" or "it is not sufficient for him to find a respect in which the many components are one *human being*, if this leaves the *human being* being a plurality of *diverse matter and form, with unity prior to the human being's unity*."

In sum, it is not composition alone, as Gill and Scaltsas would have it, but rather composition of *prior unities*, that threatens the unity of a hylomorphic composite. Composition of prior unities, not composition in general, is the real threat to unity of an organism. And to accuse constituent ontology in itself of undermining this unity is to overlook key claims of Aristotle's metaontology.

So, I have argued, Gill's and Scaltsas's objections to a constituent ontological understanding of hylomorphic unity are only forceful if understood as versions of the objection given in the last section of the preceding chapter. But as we have seen, this objection is *not* an objection to constituent ontology *per se*; rather, it is an objection to the claim of the *priority* of the unity and diversity of some constituent to the unity and diversity of the organism. And if constituent ontology can be separated from this presumption, then it remains untouched by the objection of Gill and Scaltsas and by the objection given in the preceding chapter.

*If* it can—but can we say more? Can we show that constituent ontology can be separated from the presumption of the prior unity of some constituent? Can we articulate a detailed constituent ontological vision of the relationships between matter, form, and
organism, a vision according to which these constituents, though non-identical, are not
prior unities and hence do not undermine the organism's specific kind of unity, so that we
can continue to maintain the diversity of organisms as underived?

In the next section, I will argue that we can articulate a constituent ontological
vision of hylomorphism which keeps the unity of an organism's components from
counting as prior to the unity of that organism. If we use the relationships between
species, genus, and differentia as an analogy for the relationships between organism,
matter, and form, we can explain how the unity of matter and form are not prior to the
unity of the organism in a way that remains compatible with the central claim of a
constituent ontology, that organisms are composites of non-identical constituents.

4.2 The Hylomorphic Organism: Matter and Form as Lacking Prior Unity

It is well known that Aristotle, particularly throughout the middle books of the
Metaphysics, refers time and again to an analogy that is supposed to hold between genus
and matter, differentia and form, and species and organism. After all, just as the
organism is supposed to have fully determinate and irreducible unity full stop, so the
species is supposed to have the most determinate level of unity still subject to definition.
My proposal is that one key point of this analogy is to afford us with an explanation of
how an organism, despite including matter and form, maintains its unity: in the way that
the species, despite being defined by a genus and differentia, maintains its unity. In the
case of the species, I will argue, unity is maintained because the unity and diversity of the
genus and differentia are never prior to the unity and diversity of the species. If we
extend this reasoning to our understanding of matter, form, and organism, so that the
unity of matter and the unity of form are not prior to the unity of the organism, we end up
with a vision of hylomorphism supported by many other texts about matter and form (even texts not involving the analogy with species). The understanding of hylomorphism suggested by the analogy thus connects well with other key points of the *Metaphysics*.

I will begin by giving textual support for the analogy between genus and matter, differentia and form, species and organism. Aristotle articulates his concern to maintain the unity of the species in *Metaphysics VII.12*:  

Now let us first treat of definition, in so far as we have not treated of it in the *Analytics*; for the problem stated in them is useful for our inquiries concerning substance. I mean this problem: wherein consists the unity of that, the formula of which we call a definition, as for instance in the case of man, two-footed animal.... Why, then, is this one, and not many, viz. animal and two-footed? (1037b9-14).

He explicitly states that the problem concerning the definitional unity of the species "is useful for our inquiries concerning substance," and goes on to draw the analogy between genus and matter: "If then the genus absolutely does not exist apart from the species which it as genus includes, or if it exists but exists as matter (for the voice is genus and matter, but its differentiae make the species, i.e. the letters, out of it), clearly the definition is the formula which comprises the differentiae" (1038b5-6). Regarding the differentia, he goes on to draw its analogy with form: "one differentia—the last—will be the form and the substance" (1038a25-26). Implied in each of these passages is that the genus is matter for the *species*, and that differentia is the form of the *species*. A parallel is thus drawn between the problem of unity for the species, comprised of genus and differentia, and the problem of unity for the organism, comprised of matter and form.

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137 He also makes this point at the beginning of *Metaphysics VIII.6*. 

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In order to see how this analogy helps to resolve the problem of unity for the organism, we first need to understand how Aristotle solves the problem about unity for the species. Let us first consider the relationship of genus to species, referring again to this quotation from *Metaphysics* X:

> For not only must the common nature attach to the different things, e.g. not only must both be animals, but this very animal must also be different for each (e.g. in the one case horse, in the other man), and therefore this common nature is specifically different for the two things. One then will be in virtue of its own nature one sort of animal, and the other another, e.g. one a horse and the other a man. This difference then must be an otherness of the genus. For I give the name of 'difference in genus' to an otherness which makes the genus itself other (1058a1-8).

At the specific level, the genus under which two species fall is itself different (specifically); but the difference in these species is the *source* of this specific difference in the genus (rather than the other way around). In other words, the genus does not diversify the species (it is, after all, less determinate than the species!), but the reverse. The species is not yielded by adding a differentia to an antecedently determined genus; rather, the species is primary and the genus is what remains when we consider the species in abstraction from the differentia. The previous quotation from *Metaphysics* VII.12 provides a helpful model for understanding this relationship between species and genus: there is no such thing as a vocal sound which is not of a particular pitch; there are rather many kinds of vocal sounds, each of a particular pitch. Just so, there is no *animal in general*—there are, rather, many animals, each of which falls under some more determinate species. Ultimately, there is no *one genus*; there are rather *distinct species that are generically one*, with the genus itself being divided up among these different species. Although both horses and humans alike count as animals, what it is to be an
animal differs for a horse and a human—this is what Aristotle means when he says, regarding horse and man, that "this very animal must also be different for each" in the quotation given above.

On this picture, the genus has its unity posterior to the unity of the species, because the specific differences make "the genus itself other." In other words, the genus is diversified (and thus unified, since unity and diversity go hand in hand as explained in chapter three) by the species. Hence, the unity of the genus does not undermine, but instead presupposes, the more fundamental unity of the species.

If, now, we extend these results about genus and species to the analogous case of the organism and its matter, we get the result that within two different co-specific organisms, the matter each has is indeed distinct from the matter had by the other (just as the genus is divided up between different species). However, the source of this difference in their matter is the difference in these organisms (rather than the other way around, as the traditional view would have it). Just as the difference in species is primary, with the genus itself being divided up by specific differences, so in the case we are concerned with the difference in the organisms is primary, and the diversity of their matter derives from the diversity of organism. Taken in its own right, matter lacks diversity (as well as unity). Matter's unity is thus posterior to that of the organism. This is precisely the reverse of the traditional view on diversification in Aristotle.

Such a view of matter is independently supported by a number of other texts. Aristotle describes matter in *Metaphysics* VII.3 as, in its own right, neither choriston
This means that matter cannot exist on its own, apart from a form and an organism of which it is the matter. It is not something we can point to; for it does not fall under a determinate form of being. Unlike matter, an organism is something we can point to and something which falls under one of the determinate kinds of being; it, unlike matter, does not depend on anything external to it for its existence. Similarly, Aristotle tells us in *Metaphysics* VII.16 that things like earth, fire, and air, which enter into the matter of substances, "are like a heap before it is fused by heat and some one thing is made out of the bits" (1040b8-9). He goes on to clarify that to yield a whole which is one, "not like a heap," flesh, fire and earth, which exist merely as matter, will not be enough: "the flesh is not only fire and earth or the hot and the cold, but also something else" (1041b18-19). We need also "the form, by reason of which the matter is some definite thing" (1041b7-8). This claim fits well with his earlier insistence that "matter is unknowable in itself" (1036a8); it is only once it has been enformed that it has a determinate kind of being and unity. These texts all support an idea of matter as not, in its own right, divided into diverse parcels (since it is not unified in its own right, and diversity presupposes unity).

We can now address the objection which opened this chapter, the objection regarding the unity of the organism, with respect to matter. It clear that on this model the unity had by the matter of an organism is not an antecedently determined, prior unity which threatens the unity of that organism, as Gill and Scalsas would have it. On the

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138 See 1029a27-29. This text, of course, is extremely controversial, but on certain interpretations it is taken to provide strong evidence about the nature of Aristotelian matter.

139 This view of matter as not, in its own right, either numerically one or numerically diverse is supported also by Aristotle's strong opposition to monism and pluralism in *On Generation and Corruption*, particularly in II.7.
contrary, an organism's matter derives its unity from the unity of the organism, whose unity is in turn fundamental, underived, and irreducible. Because of this, it is also clear that on this model, matter cannot be the principle of diversification for organisms. After all, it lacks unity in its own right; its unity derives from the unity of the organism (and since any diversity is always a diversity of unities, the matter also lacks diversity in its own right). Instead, the diversity of the organism, like its unity, is prior to the diversity of its matter; the organism serves as the principle of diversification for its matter. To summarize, we should see the unity and diversity of matter as posterior to the unity and diversity of the organism, as we see the unity and diversity of the genus as posterior to the unity and diversity of the species.

Turning now to the analogy between form (with respect to the organism) and differentia (with respect to the species), this analogy helps us to view the unity and diversity of an organism's form in a way which does not make its unity prior to the numerical unity and diversity of the organism (although, as we will see, form's unity will also not be posterior to the unity of the organism, as matter's unity was). The first point to note is that whereas the unity of the species is prior to the unity of the indeterminate genus because it unifies and diversifies the genus (animal itself is different for "man" and "horse"), the unity of the species cannot be prior to the unity of the differentia in this way—it cannot be the source of the unity and diversity of the differentiae. For the unity of the species is not a more determinate form of the differentia's unity, as the unity of the species is a more determinate form of the genus's unity. To make such an assertion would be a kind of category mistake. After all, the correct definition will always list the last differentia (1038ª19-20), which must be, in itself, a fully determinate unity: there are
no more determinate "instances" of it, as there are more determinate instances of "animal." The unity of the differentia, then, is not posterior to the unity of the species.

At the same time, however, we also cannot say that the unity of the differentia is prior to the unity of the species. For in order to say this, the species's unity would have to be a less determinate form of the differentia's unity, as the genus is a less determinate form of the species's unity. But the species's unity is not a less determinate form of the differentia's unity. To assert this would be a kind of category mistake. So the unity of the species can be neither posterior to nor prior to the unity of the last differentia.

The only remaining possibility is to take the unity (and diversity) of the differentia as coeval with the unity (and diversity) of the species. The unity of species and differentia are on par with each other. To fill out the analogy, then, just as we see the unity and diversity of the differentia as coeval with, not prior to, the unity and diversity of the species, we should likewise see the unity and diversity of form as coeval with, rather than prior to, the unity and diversity of the hylomorphic organism. Whereas matter is a less determinate unity than the organism, form is neither a more nor a less determinate unity than the organism. And since form's unity is not prior to the unity of the organism, it also does not threaten the unity of the organism.

Other texts independently support the vision of form suggested by this analogy. As we hear often throughout the middle books of the *Metaphysics*, form is not a self-subsistent substance; it does not exist apart from the individuals:

> Obviously then the cause which consists of the Forms (taken in the sense in which some maintain the existence of the Forms, i.e. if they are something apart from the individuals) is useless with regard both to comings-to-be and to substances....Obviously, therefore, it is quite unnecessary to set up a Form as a pattern...the begetter is adequate to the making of the product and to the causing of the form in the matter. (1033b26-1034a5)
In my view, a key reason for Aristotle's constant reiteration of these points is to make it clear that the unity of form is not prior to the unity of the organism; that is, it is not a more determinate form of unity than the organism's unity. One other way Aristotle makes this point is by focusing on the fact that form is not a tode but a toionde, not a "this" but a "such." Unlike the organism, form is not a "this"—so although it has fully determinate unity (unlike matter), the type of unity is has does not compete with the numerical unity of the organism. Another way he puts this point is in his clarification in *Metaphysics* Z.16 that form, unlike matter, is "not an element but a principle" (1041b31). Not only does form not compromise the numerical unity of the organism, but it is the source of that organism's specific kind of unity. And we know from one of the key points of Aristotle's metaontology that nothing can have merely numerical unity, without unity under a kind. The resultant picture of the relationship between form and organism is far from one on which the unity of form compromises the unity of the organism. Form is the source of the organism's specific kind of unity, which is requisite for the organism's numerical unity. Form, however, is not, on the view I have articulated, the source of the matter's numerical unity/diversity; that role remains in the hands of the organism.¹⁴¹

To sum up the key points gleaned from our analogy, regarding form and organism, we find support for concluding that the unity of form is coeval with, not prior

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¹⁴⁰ See *Metaphysics* Z.8: "The 'form' however means the 'such', and is not a 'this'—a definite thing" (1033b22-23).

¹⁴¹ So form is the cause of the kind of unity that matter takes on; it is in this sense, as I see it, that Aristotle tells us that form is related to matter as "the primary cause of its being" (1041b29). Read in this way, this text does not imply that the unity of the form is prior to or the source of the numerical unity of the organism. And far from detracting from the numerical unity of an organism, unity under a kind is requisite for numerical unity. So this text need not be read as implying that the form is the source of, or prior to, the numerical unity had by the organism, but only the source of its specific kind of unity.
to, the unity of the organism. Form does not have a *more determinate* kind of unity than the organism does, nor does the organism have a more determinate kind of unity than the form; the unity of form and the unity of organism are both fully determinate. Regarding matter and organism, while the diversity of matter presupposes the diversity of the organism, the reverse is not true. The diversity of the organism does not presuppose the diversity of matter; on the contrary, the organism's diversity is prior and indeed *diversifies the matter* into a unity diverse from other unities (just as the species, being a more determinate unity than the genus, diversifies the genus into distinct kinds). The unity of matter, then, does not compete with the unity of the organism; rather its numerical unity (and diversity) is posterior to, or derived from, that of the organism. Neither form nor matter, then, has unity that is prior to the unity of the organism, and the objection developed in the preceding chapter regarding the unity of hylomorphic organisms is thus avoided.

The last aim of this section is to show that the picture of hylomorphism suggested by this analogy, wherein the fundamental unity of the organism is maintained, is *compatible* with a constituent ontological vision of hylomorphism: that is, one can maintain a constituent ontological version of hylomorphism which does not compromise the fundamental and irreducible reality of organisms. In chapter two, I argued that the ontological presupposition common to the mainstream views is the presupposition that organisms are composites of non-identical constituents. And I went on to argue that once we see Aristotle's hylomorphism in this way, there are clear motivations for seeing it as meeting certain further criteria associated with what has come to be called the constituent
ontological strategy, thus supporting the use of this label to characterize the presupposition of the mainstream views.

First, the vision I have proposed here remains consistent with the core thesis of a constituent ontological hylomorphism: that organisms are composites of non-identical constituents. The preceding section proposes, first, that we view the unity of matter as posterior to the unity of the organism (as the unity of the genus is posterior to the unity of the species), and second, that we view the unity of form as coeval with the unity of the organism (as the unity of the differentia is coeval with the unity of the species). But neither of these claims stops us from viewing matter and form as non-identical both to each other and to the organism taken as a whole. So the central claim of a constituent ontological vision of organisms can be maintained on the model of hylomorphism articulated in this section, one wherein the unity of matter and that of form is not seen as prior to the unity of the organism—its unity remains irreducible.

When Gill and Scalsas articulate their objections, they seem to be assuming only the claim of non-identical components as the one essential for a constituent ontology: merely, that is, the claim that organisms are composites of non-identical components. So perhaps a vision of a constituent ontological hylomorphism which meets only this basic criterion of a constituent ontology is not too narrow to count as a true version of constituent ontology. However, we can already see that my model is consistent with other claims explored in chapter two as associated with the constituent ontological strategy (or perhaps even as constraints on the strategy, although I will not here settle this question). For example, my model supports the claim that neither an organism's form nor its matter is a commonsense part of the organism, that is, a part "which measures a thing
in respect of quantity" (1034b35). For clearly enough, the genus and the differentia do not count as commonsense parts of the species. Secondly, my model is consistent with maintaining that an organism's matter and form account for its character, as long as "account for" is not interpreted in so strong a way as to require the prior unity of matter and form. Aristotle tells us, in giving an account of what the organism is we must refer both to matter and to form: "to bring all things to Forms and to eliminate the matter is useless labour; for some things surely are a particular form in a particular matter.... It is clear also that the soul is the primary substance and the body is matter, and man or animal is the compound of both taken universally" (1036b22-1037a6). The vision of matter and form suggested by the analogy with genus and differentia, respectively, does not conflict with the thesis that appealing to both an organism's matter and an organism's form is necessary and sufficient to account for the character of that organism. After all, it is likewise true that in defining the species, one must appeal both to the genus and to the differentia.

So on the model I have proposed, a constituent ontological reading of hylomorphism can maintain the irreducible and fundamental unity of the organism, contrary to the objections of Gill and Scaltsas. I want to close this section by noting that the way in which this analogy supports the unity of the organism at the same time cuts against the mainstream views on the diversification of organisms in favor of the view that diversity is basic. After all, matter, according to the analogy, does not have unity or

142 The next chapter may help to assuage any worries that may arise regarding whether matter in particular, on my model, has enough independence to account for the character of the organism. Is some sense of priority required for matter to account (partially) for the character of the organism? In chapter five I will argue that an organism's matter, though not prior to it with respect to the order of being, is prior to it with respect to the order of generation.
diversity in its own right; rather, it derives its unity from the organism. Hence it *cannot* serve as the principle of diversification for organisms. And the unity of form is coeval with, rather than prior to, the unity of the organism, which means that it likewise cannot be the source of the organism's unity and diversity. This leaves the diversity of organisms as primary, not to be explained by reference either to their form or to their matter.

4.3 Conclusion

In this chapter I have argued that Aristotle's metaontology gives us key reasons to reject the mainstream views on diversification for organisms. However, rejecting the mainstream views on diversification does not require rejecting constituent ontology. The foremost objection on the part of those who reject constituent ontology seems to be that if organisms were composed of non-identical constituents, this would compromise the unity that Aristotle insists organisms have; organisms would end up looking too much like heaps of these constituents. I have argued, however, that this objection only has force when supplemented into a version of the objection given in the previous chapter: the objection that the constituents enjoy a unity *more fundamental*, or prior, to that of the organism.

However, Aristotle's analogy between the unity of a species and the unity of an organism undermines this objection in a way that remains compatible with a constituent ontological vision of organisms. It also supports the view that neither matter nor form serves as the principle of diversification for organisms; rather, the diversity of the organism is primary and does not admit of explanation in terms of anything else. We thus have a model with strong textual support in Aristotle for the view that hylomorphic
organisms can be understood according to a version of the constituent ontological
strategy: a version which claims that organisms are not composites of prior unities, so
that their diversity remains, contrary to the mainstream views, basic or underived. And
since unity and diversity go hand in hand, the same is true of their unity.
CHAPTER 5:
A CONSTITUENT ONTOLOGICAL HYLOMORPHISM:
ONE AND MANY, BEING AND BECOMING

My focus thus far has been on the being and unity of hylomorphic organisms. However, there are two other central concerns of Aristotle's which I now want to bring into focus. First, Aristotle defends a view of nature that opposes the Parmenidean vision of plurality as mere appearance—for example, he insists that the plurality of organisms does not stop each one from counting as an irreducible unity. Second, he argues that each irreducibly unified member of this plurality of organisms can undergo generation and corruption without undermining its reality. For these reasons, there is motivation to say that the conclusions we draw about unity and being for Aristotle should be compatible with those we draw about plurality and becoming.

The preceding chapter argued that a constituent ontological vision of organisms is compatible with a model of hylomorphism according to which neither constituent has its unity prior to the unity of the organism. It argued, further, that such a model is sufficient to ground the irreducible reality of organisms—we need not, as some have argued, reject constituent ontology altogether in order to support this insight about the fundamentality of organisms. The previous chapter, in sum, served as a defense of a constituent ontological hylomorphism against those who argue that it does not respect the unity of organisms, rather than a positive argument for the view.
With this defense in the background, my aim here is to address objections from another angle. In particular, those who maintain a version of constituent ontology that does commit itself to the prior unity of matter (e.g., proponents of the traditional view on diversification) might worry that my view lacks two features which make their version of hylomorphism preferable to the non-constituent ontological version: first, their ability to account for the plurality of pieces of material within a particular organism, and second, their ability to account for the becoming of a particular organism by appealing to the pre-existence and persistence of that organism's material before its generation and after its corruption, respectively. The non-constituent ontological views are unable to maintain these two points, while those constituent ontological views that imply the prior unity of matter clearly can maintain them. If organisms are unanalyzable unities, lacking any non-identical constituents, then they cannot have any matter which is distinct from them at all; a fortiori, they cannot have multiple numerically distinct pieces of matter involved in their composition. In addition, the non-constituent ontological view cannot allow for the matter from which an organism is generated (or, for that matter, the matter which remains after an organism's death) to be numerically identical to the matter which composes that organism during its life. For allowing this would imply either a) that the organism is identical to its pre-existent matter and hence was before it came to be (a contradiction), or b) that the organism retains, during its life, a component which is non-identical to it (contradicting the non-constituent ontological view). Those constituent ontological views which maintain the prior unity of matter, on the other hand, can maintain both points, since the matter retains its own prior unity before, throughout, and after the whole process of the generation, life, and corruption of the organism. Have I, in
trying to avoid the difficulties of the mainstream views, gone too far and also avoided what many might see as their key strengths? Is the prior unity of an organism's matter required to support its division into a plurality of pieces or parcels within the organism, as well as its pre-existence and persistence outside of that organism's life?

Before answering these questions, I want to clarify that I do not here intend to directly argue for the attractiveness of these two theses regarding a plurality of pieces of material internal to the organism and the pre-existence and persistence of numerically the same matter that composes the organism during its life. I will, in the course of this chapter's arguments, highlight some of their advantages, but one may find them unnecessary or problematic for alternate reasons. Ultimately, the main aim of this chapter is to show that the version of constituent ontology I have articulated in the preceding chapter, which avoids seeing either constituent as a prior unity, is compatible with both the claim that an organism has within itself a plurality of pieces of material and the claim that the matter of an organism pre-exists and persists after its life. If my argument here succeeds, then one who already finds these claims attractive would thereby have one reason to prefer the version of hylomorphism I suggest to the non-constituent ontological version. In addition, if my argument here succeeds, then the particular version of a constituent ontological hylomorphism which I have articulated in the previous chapter does maintain both the strengths of those versions of constituent ontological hylomorphism that remain committed to the prior unity of some constituent (namely, the strengths regarding plurality and becoming, strengths lacked by the non-constituent ontological view), while avoiding the central weakness of those versions: the threat of reductivism (as does the non-constituent ontological view).
5.1 One and Many

One might worry that if, as the view I have proposed has it, an organism's matter is diversified by the organism, there will not be enough pieces of matter within the organism's body. Many would want to claim, for example, that the matter of an organism's heart is distinct from the matter of the organism's brain. But what grounds would we have for this assertion, on my view? Does my view allow for more than just one single, undifferentiated mass of material composing each organism's body? To respond to this objection we need to look into Aristotle's discussion of the sort of unity had by matter and how it is related to other sorts of unity, in particular the sort of unity had by the organism. Aristotle distinguishes in *Metaphysics* X.1 between different senses of unity. For our purposes here, the first two senses are key:

(1) There is the continuous, either in general, or especially that which is continuous by nature and not by contact nor by bonds; and of these, those things have more unity and are prior, whose movement is more indivisible and simpler.

(2) That which is a whole and has a certain shape and form is one in a still higher degree; and especially if a thing is of this sort by nature, and not by force like the things which are unified by glue or nails or by being tied together, i.e. if it has in itself something which is the cause of its continuity. A thing is of this sort because its movement is one and indivisible in place and time; so that evidently if a thing has by nature a principle of movement that is of the first kind (i.e. local movement) and the first in that kind (i.e. circular movement), this is in the primary sense one extended thing. (1052a19-28)

He is not here talking about types of specific unity (or unity at any higher level of generality), but rather about types of numerical unity. This is clear because he talks about degrees of unity, and for Aristotle there cannot be degrees of unity at the specific level or at any single more generic level of unity (something is either a human being or not a human being, either an animal or not an animal). When we combine this passage with Aristotle's claim in *Metaphysics* XII.3 that one of "three kinds of substance" is "the
matter, which is a 'this' by being perceived (for all things that are characterized by contact and not by organic unity are matter and substratum)" (1070a9-11), we see that Aristotle places the numerical unity of matter under the first sense of unity given above: The unity that characterizes matter, taken in itself, is the unity of continuity (in particular, continuity caused by contact). According to these passages, then, we have one piece of matter if and only if we have a continuous piece of matter.

The second category, of things which have shape or form, is further divided into those things which have shape or form "by nature" or "by force." A thing which has shape or form by nature, he adds, has something "in itself which is the cause of its continuity" (e.g., a human being has a human form). His language suggests that things which have shape or form "by force" do not have something in themselves which causes their continuity (e.g., tables and chairs). Only things with shape and form by nature have such an internal principle of their continuity. Most importantly for our purposes here, then, items falling under the first category of unity, those which lack shape or form and have only the unity of continuity, like matter, do not have in themselves the cause of their own continuity; having such a cause is peculiar to things which have shape or form by nature. Now given that matter does not have in itself the cause of its own continuity, and given that continuity just is the kind of unity matter has, it follows that matter does not have in itself the cause of its own unity. We can see these texts, therefore, as aligning with my view that an organism's matter does not have within itself the principle of its unity (or, therefore, of its diversity, since unity and diversity go hand in hand). We thus have more textual support for seeing matter as diversified by the organism, given that the
type of unity had by matter is the unity of continuity and that matter does not have the principle of continuity in itself.

But in addition, we have support for seeing the matter composing an organism's body as further diversified into smaller pieces. For the type of unity had by an organism is the unity associated with the life cycle of a particular species, and in order for this life cycle to occur the organism's body must divided into certain parts whose work is necessary for, and ordered toward, the functioning of the whole organism. The unity of the organism's body, therefore, already involves and requires a plurality of organs within that body, each of which plays a particular role in the functional economy of the whole. But if the type of unity had by the organism as a whole involves not simply one unanalyzable body, but rather one body diversified into many organs and systems, and if the organism's matter gets its unity from the organism as a whole, then we likewise have not simply one unanalyzable parcel of matter, but one parcel of matter diversified into many smaller parcels of matter.

Using this insight, we can respond to the objection which opened this section. Within one organism, on my view, there are pieces of matter with differing boundaries of continuity—in other words, diverse pieces of matter. For the organism's body isn't an unanalyzable unity. It is divided into different organs and systems (each of which plays a different role in the functional economy of the whole). The matter of each of these organs and systems is discontinuous from the matter making up the others; hence the matter making up each organ counts as a unity distinct from the matter making up another organ. Moreover, this view aligns with Aristotle's claim that matter does not have the principle of its continuity (hence of its unity) in itself, but rather gets its
continuity from something else: for this view suggests that each distinct parcel of matter gets its unity (and hence its diversity from other such parcels) from the organ whose matter it is. The matter of an organism's heart is distinct from the matter of the organism's brain because the organism's heart is distinct from the organism's brain. In turn, the organism's heart is distinct from the organism's brain because these organs play differing functional roles in the teleological life of the organism as a whole. We may even be able to divide the body into smaller parcels of matter yet, if we can find smaller functional economies within the heart (e.g., the aorta); in any case, the telos of the organism as a whole is the source of the telos of each of its functional parts, so the organism as a whole will always remain the ultimate source of the diversity of any parcels of its matter. The unity of the organism remains prior to the diversity of the organs that compose it, and the matter of each of these organs derives its unity (and hence its diversity) from these organs; therefore, the unity of the whole organism remains prior to the unity of each of the parcels of matter within it.\footnote{143}

On this view, not only does the diversity of, e.g., the matter of a human heart and the matter of a human brain not compromise the unity of the whole human organism, but the unity of the organism requires the diversity of its heart matter and its brain matter. These differing organs and systems are interrelated in such a way that the telos of each is derived from, and indeed contributes to, the irreducible telos of the whole. The telos of each part derives, ultimately, from the substantial form of the organism, which governs the life of the whole and each functional part of the whole. This is why Aristotle says that "when seeing is removed the eye is no longer an eye, except in name—no more than

\footnote{143} Here I mean to leave open the question of precisely what kind of stuff this matter is.
the eye of a statue or of a painted figure." (412b20-22). Without the function of sight, which depends upon the eye's role within the life of the irreducibly unified organism, the eye is an eye in name only. And just as the unity of the whole remains prior to the unity of its organs, and is not compromised by the plurality of the latter, so, on the view I have articulated, the unity of the whole remains prior to the unity of each diverse parcel of matter involved in its composition. Diversity of matter at any level will always be supported by, and grounded in, the unity of the overall organism, which, after all, is not a static state but rather a teleologically oriented and dynamic kind of life.

5.2 Being and Becoming

Although our main concern here is being and unity, we must keep in mind the dynamic context of an organism's generation. My view holds that the organism is the principle of the numerical unity and diversity of its matter. One might worry that if this is so, if matter derives its unity from the unity of the organism whose matter it is, then prior to the generation of a new organism that organism's matter either did not exist at all (which would undermine Aristotle's insistence on a pre-existent and persistent matter for every case of generation) or existed without any unity at all (which would contradict Aristotle's metaontology).

First, my view about the source of material diversity in itself does not imply that an organism's matter cannot pre-exist or exist after the organism. This claim establishes only what accounts for the numerical unity of the matter while it is the matter of the organism; it does not claim that the organism's matter either did not pre-exist the

144 As stated in the preceding chapter, form is the principle of matter's specific unity only.
organism or else existed without any unity prior to the organism's life. To support the objection, therefore, a further premise is required: in particular, the assumption that the organism's matter cannot exist without that organism. In more detail, this objection assumes that if an organism unifies and diversifies its matter during its life, then that parcel of matter cannot possess its unity before the organism's life or retain its unity after the organism's life.

So the objector must add this premise in order to have a valid argument against my view. But, or so I will now argue, this premise fails to appreciate the teleological, and hence dynamic, nature of matter for Aristotle. To make this argument, I will articulate a way in which a proponent of the view I have suggested might maintain that an organism's matter does not live and die with the organism, but pre-exists and persists, based on the teleological nature of matter. This chapter is intended only to explain the central ideas involved in extending the view I have articulated in chapters 4 and 5 to account for plurality and becoming in the way suggested. Many important questions will arise which will not be worked out here; this chapter is intended to highlight the virtues of such a view provided that any difficulties we might encounter can be worked out.

In the passage from Metaphysics X cited in the previous section, Aristotle lays out what we might call a synchronic principle of unification and diversification for matter, that is, a principle which allows us to identify what counts as a unified piece of matter, distinct from other such pieces, at one time: namely, its continuity. And, we have seen, matter does not have the principle of its continuity, and hence of its unity, in itself; for the

145 I mean "dynamic" here only in the sense that is opposed to "static." "Dynamic" comes from the Greek word for potentiality, dunamis, and it is obvious, perhaps even trivial, that matter, being potentiality, is dynamic in this sense.
nature of matter is to be such that something else is the source of its unity. These ideas, we have seen, help us to answer the question of how an irreducibly unified organism can be composed of a plurality of pieces of material. But the idea of matter's unity as the unity of continuity does not allow us to answer the further question of how to identify one and the same piece of matter existing at different times, particularly if the matter has undergone changes of any sort. How do we identify whether a piece of matter is the same, numerically, as a piece that existed at an earlier time, particularly if it has changed its size or other properties? If I can show, in a way compatible with my view that the organism diversifies its matter rather than the other way around, that the piece of matter from which an organism is generated can be understood as persisting within the organism that is generated, and then as persisting after the death of that organism, then I will have a response to the objection that my view lacks this virtue of the traditional view that matter is the principle of diversification.

I want to argue that this diachronic question about the unity of matter is answered by Aristotle's teleological notion of being potentially. Let us turn now to one text that examines the sense in which matter is potentially, found in Metaphysics VIII.5. Centrally for our purposes, he there emphasizes that matter is not potentially anything and everything it turns into. Rather, he tells us, some changes undergone by a piece of matter will count as its corruption, while other changes are not correctly classified as involving its corruption. It is the notion of being potentially that helps us to understand when destruction of matter has or has not occurred. There is, Aristotle tells us, a clear distinction between two kinds of cases:

And is water potentially wine and vinegar? We answer that it is the matter of one in virtue of its positive state and its form, and of the other in virtue of the
privation of its positive state and the corruption of it contrary to its nature. It is also hard to say why wine is not said to be the matter of vinegar nor potentially vinegar (though vinegar is produced from it), and why the living man is not said to be potentially dead. In fact they are not... and it is the matter of the animal that is itself in virtue of its corruption the potency and matter of a corpse, and it is water that is the matter of vinegar. (Metaphysics VIII.5, 1044b31-39)

We need not take Aristotle to be making a serious, theoretical point about chemistry here. Rather, he is using commonsense assumptions about vinegar, water, and wine to make an analogy applicable to more difficult concepts like that of an organism. What is clear is that he means to establish that "being potentially" is not a bare modal notion, but also a teleological notion. If wine turns into vinegar, this is a case of "the corruption of it contrary to its nature." Hence, we should not say that some wine is potentially vinegar, even though vinegar can come from the wine; rather, turning into vinegar corrupts, or destroys, the wine. In the course of the generation of vinegar from some wine, that wine is destroyed. On the other hand, if some water turns into wine, this is not a case of corruption. Rather, it is a transformation of that water "in virtue of its positive state and its form." Turning into wine, then, should not be considered the corruption of the water; rather, it should be considered (we might say) as the development of the water. In this case as opposed to the former, I want to argue, the parcel of matter that was water and is, after the change, wine has persisted as numerically the same parcel of matter. It remains numerically the same piece of matter as long as the changes it undergoes are in accordance with, and not contrary to, its telos; that is, until it undergoes corruption contrary to its nature, to use Aristotle's terms. The notion of being potentially is, in my view, meant to capture those forms matter can take on without losing its numerical identity (e.g., water into wine, but not wine into vinegar).
In other words, water's being potentially wine means that some water (e.g., the continuous quantity of water in a cup) can remain *numerically the same* while it undergoes development into wine. When water turns into wine we cannot say that the water has been destroyed, but rather that it has *become* wine: hence, numerically the same matter *does* persist. On the other hand, if some wine ultimately gives way to vinegar, it is no longer numerically the same matter; for a case of corruption has taken place. We can say here that the wine has been destroyed; numerically the same matter *does not* persist. And once again, the persistence of numerically one piece or parcel of matter is defined by whether the changes it undergoes are in accordance with or contrary to its nature. That is, the nature of numerically one parcel of matter is teleologically defined and hence *dynamic*; a quantity of matter is, we might say, by nature not only able but indeed *meant* to shift forms. In our analogy, "water" is a name for a form that a piece of matter must take on *on its way to becoming* wine.

So the two opposing notions of development and corruption help us to answer the question of when a piece of matter remains the numerically the same or is destroyed, respectively. How does this vision of the teleologically defined, and hence *dynamic*, nature of matter allow us to answer the question about persistence of an organism's matter before and after its life? To answer this question we need only shift the terms of the water/wine example to reflect the example of the organism. Given my argument in the previous section of this chapter, any piece of matter within an organism gets its identity as such by playing some functional role within the organism's body. Hence, before a given organism came to be, the principle of its matter's unity (and diversity from

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146 Again, I mean "dynamic" in the sense opposed to "static."
other parcels of matter) was the functional role it played within the mother's reproductive system. And the role it was given there was precisely that of being potentially a human being's matter—it was given precisely the sort of continuity requisite for becoming a human being's matter. And once the organism came to be and throughout the organism's life, its matter counted as numerically the same as this pre-existent matter because it had undergone a change in accordance with its nature of being potentially a human being's matter, not a change which opposes this nature: it had become actually the matter of a human being. There are forms a piece of matter must take on in order to develop into a certain kind of living body (which forms these are, precisely, is just one of the key questions which will not be pursued here); taking on these different forms throughout the developmental process does not undermine its persistence as numerically the same matter, but is rather expected by its identity as whatever kind of matter it is.

In other words, the different forms which a parcel of potentially, e.g., human matter (originally unified and diversified by its role within the mother's body, as explained in the preceding section) takes on during the developmental process are given their identities by their contribution to the more fundamental unity of the human kind; their unity and diversity is thus posterior to the unity of the human kind.\footnote{This is not surprising if, as I have argued, the numerical unity of the organism's matter is likewise posterior to the numerical unity of the organism.} So although the matter of the generated organism may no longer fall under the kind which actually characterized the pre-existent matter for the human being (while it was within the body of the mother), it is still numerically the same because it now has a form of being actually which the pre-existent matter had potentially. Deriving the numerical unity (and hence

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diversity) of an organism's matter from the unity of the organism allows us to maintain the persistence of that matter through all the changes required for the development and life of the organism: if these changes are steps in the teleologically oriented life cycle of the organism, then the matter does not lose its numerical identity. Giving matter its unity and diversity prior to that of the organism as a whole, on the other hand, makes it difficult to account for the persistence of numerically one piece of matter without undermining (or at least de-emphasizing) the immense changes which that matter is meant, by nature, to undergo during the life of that organism.\footnote{148}

Upon the organism's death, its matter will continue to count as numerically the same piece of matter until it undergoes corruption contrary to the nature given to it by the mother's reproductive system (i.e., into a lower-level kind of matter which is no longer potentially a human being's matter). Here, again, I mean to leave open the question of precisely what sort of stuff this remaining non-functional matter is (perhaps it is some mixture of the elements, as defined in \textit{On Generation and Corruption} I.10); all that matters for my purposes is that it is the matter that composes the corpse, and according to my argument, until it undergoes corruption it remains numerically the same as the non-functional matter that composed the organism when it was alive.\footnote{149}

\footnote{148} The points made in this paragraph emphasize my view as one which attempts to balance between the opposing views of substantial coming to be found in Loux, \textit{“Aristotle and Parmenides: An Interpretation of Physics A.8,” Proceedings of the Boston Area Colloquium in Ancient Philosophy} 8 (1992), and Kelsey, \textit{“Aristotle Physics I 8,” Phronesis} (2006).

\footnote{149} We must keep in mind that the example of vinegar, water, and wine need not be interpreted as a serious scientific claim. But it is crucial that we see Aristotle as maintaining that in the destruction of wine (and likewise in biological cases), there be some persisting matter (of a lower level) if we are to avoid the Parmenidean dilemma for the case of corruption.
One might worry about the implication of my view that there are differing principles of unity for numerically one piece of matter over time. That is, one implication of the view articulated in the preceding paragraph is that the cause of the continuity, i.e. of the numerical unity, of an organism's matter shifts over time. Prior to the generation of the organism, the principle of unity and diversity for that matter (the principle of its continuity) was the functional role it played within (for Aristotle) the mother's body: namely, being potentially the matter of a new organism. So, its unity and diversity was derivative from its mother's unity and diversity. However, it can continue to exist apart from the mother as long as it does not undergo corruption contrary to its nature—i.e., as long as it does not lose its nature of being potentially the matter of a new organism. I take this result of my view as a strength; for this is just what it is meant to do: it is meant to become the matter of new organism, distinct from the mother. Far from compromising matter's persistence as numerically one piece of matter, in my view, this temporal shift in the source of its continuity is predicted by the teleological, dynamic kind of unity matter has. Upon the moment of the new organism's generation, the piece of matter does not lose its nature—precisely the opposite happens. Its telos is not only maintained, but fulfilled. Because of this, according to my argument it remains numerically the same matter as it was when its unity (i.e. its continuity) was under the governance of the mother's body.

However, the source of this unity has now changed: the matter's unity and diversity (i.e., its continuity) is now governed by the newly generated organism. It can, therefore, undergo more changes of various kinds (e.g., changes in size, changes in composition, and whatever other changes are expected or compatible with the life of the
organism whose matter it is) without losing its numerical identity, which it derives from
the persisting unity of the organism through all of its teleologically oriented processes of
growth and development.

Finally, upon the death of the organism, its matter does not take on a new
principle of unity—hence it cannot undergo any new changes except those of corruption,
i.e. those which cause it to lose its continuity and thus its numerical unity. Upon its
corruption the organism's matter loses its numerical identity, since the changes it
undergoes are no longer ordered by the changes required for or involved in the life cycle
of numerically one human being. So numerically the same piece of matter can persist
through change—but only change of the appropriate sort, governed by the generation and
development of whatever kind of organism it is the matter for. Once it loses the
continuity it received from the organism whose matter it was (or, previously, from that
organism's mother), it loses its numerical identity. But it does not lose this continuity
until it undergoes corruption.

Therefore, worries that arise on the traditional view concerning later organisms possibly being
composed of all the same matter as earlier organisms do not arise on my view. The difficulties raised in
Fine, "A Puzzle Concerning Matter and Form," therefore do not apply to my view.

The claim that numerically one piece of matter persists until it undergoes corruption may be
helpful in resolving some of the dilemmas surrounding the traditional doctrine of prime matter in Aristotle,
at least within the context of organisms. According to this doctrine, prime matter is that substratum
common to the four elements (fire, air, earth, and water) and paired, in each case, with a different pair of
the elemental contraries (for an articulation of this doctrine, see C.J.F Williams, Aristotle's De Generatione
et Corruptione [New York: Oxford University Press, 1982], p. 213). Furthermore, in any case of
transformation between two elements, prime matter serves as a pre-existent and persistent substratum. On
the view I have articulated, a piece of, say, earth, could be diversified from other pieces of matter by the
specific role it plays within a particular organ of some organism; the prime matter in that piece of earth,
then, would be diversified from other pieces of prime matter because it is the prime matter of that piece of
earth (rather than the other way around). In turn, this piece of prime matter would persist, in my view, until
it undergoes corruption. But since prime matter is the lowest level of matter there is, there is no possibility
of its corruption. This is why elemental change is a case of transformation, and not of generation and
corruption. Hence, one and the same piece of matter could persist throughout the transformation from earth
into some other element (e.g., water). We could thus maintain the persistence of numerically one piece of
matter throughout every change in the material hierarchy, all the way down to the level of prime matter.
Worries we might have about numerically one piece of matter persisting through changes in its form (and having different principles of unity over time) are fitting, I think, on a view where matter is *not* unified/diversified and given a *telos* by the life cycle of a particular kind of organism. But if we view matter in the teleologically dynamic way I have suggested, these worries begin to fade. To ask for *more* evidence guaranteeing that the pre-existent matter is numerically the same matter as that which later composes the new organism, or guaranteeing that the matter of the corpse is the same matter as that which once composed the organism, is to fail to appreciate the teleological nature of matter and the fundamentality of the *organism*, with its teleologically oriented life cycle, in being the source of the numerical unity and diversity of its matter (rather than the other way around). It is written into the identity of a given piece of matter to undergo changes of a certain variety, changes in accordance with the *telos* that defines its unity as matter, but not to undergo changes of another variety, those which result in its corruption.

My answer to the question about matter's persistence through *becoming* connects with the view I have suggested about *plurality* in the preceding section, where I argued that unity for matter is defined by continuity. Since matter lacks a principle of continuity in itself, a piece of matter, such as some matter within the mother's reproductive system *m*, gets its continuity from the role it plays in the *mother's* body. Its numerical unity, then, is ultimately derived from the *mother's* numerical unity. But since the mother's unity is the unity of a certain kind of organism with a *telos*, we should only expect that *m*'s unity, too, will have teleological implications associated with the same species. And if it has a *telos*, then we should not see it as a static piece of matter that must always remain the same. It should be seen as dynamic, with its persistence being defined by
whether it is moving toward its telos, reflecting the dynamic unity of the life of the organism whose matter it is. Indeed, in the case of the matter that is required to generate a new human being, it fulfills its telos precisely by becoming the matter of a new human being and undergoing the changes that follow thereupon.

This idea that changes in matter need not undermine matter's numerical unity, but rather are predicted by this unity, is supported by Aristotle's statement that not only does movement and change not necessarily undermine unity, but it can even be the source of unity: Among things with the unity of mere continuity, he says, "those things have more unity and are prior, whose movement is more indivisible and simpler (1052a21-22)."

This is true even at higher levels of unity: Among things with the unity of shape and form, "A thing is of this sort because its movement is one and indivisible in place and time... (1052a25-26)" In these cases, he tells us at the end of the passage, "these are one because...the movement...is indivisible" (1052a36-1052b1).

5.3 Conclusion

At the end of Metaphysics VIII.6, Aristotle faults earlier thinkers for seeking "a unifying formula, and a difference, between potentiality and actuality. But, as has been said, the proximate matter and the form are one and the same thing, the one potentially, the other actually. Therefore to ask the cause of their being one is like asking the cause of unity in general; for each thing is a unity, and the potential and the actual are somehow one" (1045b17-1). Aristotle here draws upon his metaontological views to explain why we should not be worried about the unity of something composed of matter and form. For this worry only arises if we assume that matter or form has "unity in general." But there is no such thing as unity in general; there are, rather, all the equally fundamental
kinds of unity associated with each species. And matter and form, clearly enough, do not undermine each specific kind of unity. Rather, they are requisite parts of it.

Aristotle continues by making another statement that aligns with the arguments I have made in this dissertation. To those who would ask him for a cause of the unity of matter and form, he answers, "Therefore there is no other cause here unless there is something which caused the movement from potentiality into actuality" (1045b21-23). But, as I have argued, those who see matter or form as the principle of diversification for organisms are committed to holding that there is just the cause of the unity of matter and form that Aristotle here denies. For they are committed to one constituent of organisms being the principle of diversity for organisms; and since diversity and unity go hand in hand, they are also committed to one constituent of organisms being the principle of unity for organisms. But Aristotle here tells us that the only sense in which there is a cause of the unity of organisms, other than the organism itself, is on the level of efficient causality: "there is no other cause here, unless there is something which caused the movement from potentiality into actuality." We can say why the organism became a unity (due to its efficient cause), but there is no "other" explanation of the unity of the organism once it has come to be. The unity of the organism is underived.

On the view of matter I have articulated, persistence of numerically the same matter does not imply persistence of any actual kind, such as blood or flesh, belonging to the matter from which an organism is generated. The only kind that must persist is the kind which is first had potentially (when the matter is still given its continuity by the role it plays within the body of the mother) and then actually (once the new organism has been generated out of it): the species kind of the organism to be generated. This is
because the numerical unity of matter is defined by the organism, and is, consequently, teleologically oriented; it only counts as different numerically if it has undergone corruption. As long as it is proceeding along the trajectory which is hypothetically necessary for the achievement of its telos, it counts as numerically the same piece of matter. It does this until it undergoes corruption after the death of the generated organism.

On the vision of Aristotle's hylomorphism I have articulated, organisms' matter is cut up into distinct pieces teleologically, with material diversity within the organism always posterior to the fundamental unity of the organism. And matter's unity is grounded in, rather than subverted by, becoming. Becoming, of the appropriate, teleologically oriented sort, does not compromise, but defines being and unity for matter.

This is the vision made possible by a focus on organisms as the central locus of reality in the sublunary world, on organisms as fundamental rather than on forms or on lower-level matter as fundamental. According to what I have suggested here, Aristotle does not see plurality as compromising unity. Rather, organisms are made of diverse functional parts because of their unity; their particular kind of unity requires and is indeed the source of such plurality. And Aristotle sees the unity of organisms, as well as that of their matter, as grounded in, rather than compromised by, their becoming. Indeed, organisms are the source of the becoming undergone by their matter, and ultimately the source of the unity of their matter. All of this unity in plurality and being in becoming is made possible by the fundamental force of the organism's telos.

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152 See Physics I.9 for a discussion of hypothetical necessity.
CONCLUSION

In the course of this dissertation, my central aim has been twofold: 1) to show that, given central commitments of Aristotle's metaontology, we should view the diversity of organisms as underived, and 2) to show that this view of the diversity of organisms is compatible with a vision of hylomorphism that maintains the central criterion of the constituent ontological strategy, namely, seeing organisms as composites of non-identical components.

My motivations for combining these two views have also been twofold: first, to maintain the irreducible unity of organisms (by using the analogy with genus, differentia, and species to argue that matter and form should not be seen as having their unity prior to the unity of the organism), and second, to maintain both the ability to claim that an organism's body includes within it a plurality of parcels of matter and the ability to claim that the matter of an organism pre-exists and persists after the life of the organism as numerically one piece of matter. For these claims allows us to support scientific claims about material diversity within the body of an organism, as well as to maintain the strongest sense of commitment to Aristotle's definition of matter in Physics I.9.

The view of Aristotle's hylomorphism I have articulated is one according to which the material plurality involved in the body of organisms does not compromise, but is rather expected by and grounded in the multiple organs required by the specific kind of being of that organism. This kind of being is, in every case, governed not by a static
form of the Platonic variety but rather a form that brings with it an inner principle of change governed by a telos. The generation of organisms falling under this kind is also governed by this form and its telos; for this form was present (potentially) within the pre-existent material that derived its unity from the mother's body, which in turn was governed (actually) by the same telos. Aristotle's teleology, then, is at the center of the version of hylomorphism I have articulated.


