Substance, Nature, and Immanence – Form in Aristotle´s Constituent Ontology

MICHAEL J. LOUX, UNIVERSITY OF NOTRE DAME

1.

Aristotle is what we might call a constituent ontologist. At least, in the *Physics* and, especially, the *Metaphysics*, he presents an account of familiar particulars (the primary substances of the *Categories*) that construes them as something like mereological wholes—composites made up of constituents or components of various kinds.[1] The context for this account is a certain philosophical project—that of identifying what Aristotle calls the substance of familiar particulars. To identify the substance of a thing, he tells us, is to identify the cause of its being ($1017^{b}15$); but this formulation of the project requires parsing. Taken by itself, Aristotle thinks, the term 'being' is an incomplete expression: so taken, it fails to express any substantive content. It is only when supplemented with an expression signifying a kind under which familiar particulars fall that the term expresses a complete content. Accordingly, to identify the substance of a familiar particular is to identify that in virtue of which the particular is, say, a geranium, a giraffe, or a human being.[2]

The idea, then, is that a familiar object has its distinctive form of being (what we might call its essential character) dependently; it derives that character from one or more other things; and the things on which it depends for its character are or include things that have their own character nonderivatively. What Aristotle wants to claim is that the things from

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[1] This paper brings together material from a series of recent papers in which I try to lay out the contours of what I call Aristotle's constituent ontology. See Loux 2005a, Loux 2005b, and Loux 2006. The material from section 3 is new, although the framework I employ has its roots in Loux 1991 and Loux 1995.

[2] Detailed arguments for this claim are found in Section I of Loux 2005a. See, in particular, the contrast Aristotle draws in $996^{a}5$-8, $1001^{a}3$-8, and $1053^{b}9$-15. Clearly he rejects the Platonic/Parmenidean/Pythagorean view that being and unity are the substance of things. He endorses instead the view that 'being' and 'one' are to be explained by reference to some other nature ($1053^{b}13$-14).

which a familiar particular derives its character are immanent in the particular in the sense that the particular is composed or made up of them.[3]

So, familiar particulars exhibit a compositional structure. This theme is not unique with Aristotle. Even in our own day there are philosophers who invoke the constituent approach in their account of the character of concrete particulars.[4] They share with Aristotle the idea that familiar particulars are wholes of independently identifiable and metaphysically prior constituents. Taken individually, each of the constituents making up a particular falls short of, is something less than, the whole particular; taken together, they yield the whole. The relation between a composite and its constituents is analogous to that between a particular and its commonsense parts. Nonetheless, the two relations are different. The relation between a composite and its constituents is prior to that tying a familiar object and its commonsense parts. The constituents of a thing are responsible for every aspect of the thing's character, and its commonsense mereological structure is just another aspect of that character. Furthermore, it is in quite different ways that the commonsense parts and the constituents or metaphysical "parts" of a familiar object are, taken individually, less than the whole familiar object. Each of the commonsense parts of a thing is spatially less than the thing: the place a commonsense part occupies is a proper part of the place occupied by the whole. By contrast, the best we can do in response to the challenge to identify the place of one of a thing's proper constituents is to point to the place occupied by the whole. As Aristotle puts it, a particular's constituents are each substantially rather than spatially less than their whole.[5] Taken individually, each constituent induces a form of being that falls short of the form of being exhibited by its containing substance; taken together, the constituents yield precisely that form of being. Finally, while a doctrine of mereological essentialism is of dubious plausibility for the case of a thing's commonsense parts, it is inevitable for the case of its constituents. We are inclined to think that a familiar concrete object can gain or lose this or that commonsense part, but defenders of constituent ontology hold that a thing has its constituents or metaphysical "parts" essentially or necessarily.

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[3] See $996^{a}15$, $1080^{a}37$-$1080^{b}3$, $998^{a}20$ff. Aristotle contrasts what I am calling constituent ontology with theories that make the substance of familiar particulars something that exists apart from them. Wolterstorff 1991 calls such theories relational.

[4] See, for example, Armstrong 1989 and Armstrong 1997 as well as Bergmann 1967.

[5] See $1034^{b}34$-$1035^{a}5$.

On this last point, the relationship between a composite and its constituents agrees with three other compositional relations—that tying a sum or fusion of formal mereology to its proper parts, that tying a set to its members, and that tying a conjunctive property to its conjuncts. In all four cases, the composite has each of its components essentially. Indeed, in all four cases, the composite has its components both essentially and uniquely.[6] There is, nonetheless, an important difference between the compositional relation at work in constituent ontology and the other three compositional relations. The latter are all such that necessarily if it is possible for a plurality of objects to compose or make up the relevant whole (whether fusion, set, or conjunctive property) then the objects in the plurality do compose it. Not so in the case of the constituent-whole relation: the objects constituting a given familiar particular do so only contingently.

And Aristotle thinks that this relation gives familiar objects their characteristic structure. It is, of course, a particular's matter and form that Aristotle counts as its constituents.[7] He thinks it is because the particular has the matter and, especially, the form it does that it is marked out as a distinct member of its proper kind. While he tells us that a thing's matter and form only contingently compose the thing ($1029^{a}21$-23), he thinks that the thing has its matter and form essentially: for the thing to lose either, he tells us, is for it to cease to exist ($317^{a}23$-26). Finally, he thinks that a particular has its constituents uniquely. All the individuals of a species have numerically one form; but each such individual has a numerically distinct parcel of matter as a constituent ($1034^{a}5$-8).

2.

So Aristotle endorses the constituent approach to the character derivation we meet in the case of individual concrete objects. But why? Why does he not endorse instead a relational picture where contingent particulars have their character in virtue of standing in some nonmereological relation (participation, say, or exemplification) to some transcendent source of charac-

[6] This formulation works for Aristotle, but some constituent ontologists would insist that we say that where a thing, *x*, has as its constituents, *a* … *n*, put together in a certain order, *x* has both essentially and uniquely the property of being composed of *a* … *n* in just the relevant order. See, for example, Armstrong 1997, 178ff.

[7] A theme I do not discuss in this paper is the idea that an individual substance and an accident can combine to constitute the kind of composite Aristotle calls a coincidental. For a discussion of this theme, see Loux 2005a, Loux 2006, and, especially Loux 2005b.

ter? Or why does he not deny the need for any kind of ontological account of character, holding instead to a syncategorematic account of the predicate-terms that express the various forms of character? The answer, I think, is that Aristotle believes that of the available strategies, only the constituent approach to character derivation has the resources for providing a satisfactory account of the phenomenon of coming to be and passing away.

Aristotle takes it to be a prephilosophical truism that familiar particulars come to be and pass away, but he recognizes that the prephilosophical intuition we meet here needs defending. There are, after all, Parmenides' famous arguments to show that neither coming to be nor passing away is possible. To simplify, we can restrict ourselves to the case of coming to be. Towards showing that it is impossible for a thing to come to be, Parmenides presents us with a dilemma: for any candidate case of coming to be, either (i) the thing that allegedly comes to be comes to be from that which is or (ii) it comes to be from that which is not. But, Parmenides argues, (i) is impossible since a thing that is cannot come to be: it already is; and (ii) is likewise impossible since a thing cannot just "pop" into existence out of nothing or nonbeing ($191^{a}27$-31).

Aristotle's response is to reject Parmenides' interpretation of both (i) and (ii).[8] While denying that our prephilosophical concept of coming to be presupposes the sort of radical emergence *ex nihilo* that Parmenides reads into (ii), Aristotle insists that we can reject Parmenides' interpretation of (ii) without endorsing the contradictory idea that Parmenides reads into (i)—the idea that a thing pre-exists its coming to be ($191^{a}35$-$191^{b}25$). He wants to claim that whenever it is true that a concrete individual, *y*, comes to be, there is some antecedently existing thing, *x*, and some predicable content, ϕ, such that *y*'s coming to be is *x*'s coming to be ϕ.[9] Accordingly, the product of the coming to be—*y*—does not exist before the change, but neither does it just "pop" into existence, so that where there was nothing, there now is something. Prior to the change, there was the thing, *x*; and what happens in the change is that a universal, ϕ, not previously predicated of *x* comes to be predicated of it. The upshot is that, after the change, there exists a new item—the ϕ-ish *x*; and that new thing is our *y*.

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[8] See Loux 2006 for a detailed discussion of Aristotle's strategy here.

[9] See, in particular, the discussion of the coming to be of the musical man in *Physics* I.7. The example is the coming to be of a coincidental, but Aristotle makes it clear that the treatment he recommends for the case of the musical man works as well for the case of the generation of a substance. See 190^{b}1-4.

What we have labeled '*x*' and 'φ' are, of course, the matter and form of our generable individual, *y*. As we have seen, Aristotle wants to claim that a thing's matter and, especially, its form are responsible for the thing's distinctive character; and he insists that we construe these sources of character as constituents of the thing whose character they underwrite. To see why, recall the schema: whenever a thing, *y*, comes to be, there is some antecedently existing thing, *x*, and some universal, ϕ, such that *y*'s coming to be is *x*'s coming to be ϕ. But notice, the application of this schema to a sample case of coming to be serves as a satisfactory reply to Parmenides only if the thing that comes to be in the change (what we are calling *y*) is nonidentical with the antecedently existing thing we are calling *x*. Suppose instead that *x* and *y* are identical. Then, either *x* pre-exists the change or *x* does not pre-exist the change. If it does, then so does *y*; but, then, *y* cannot come to be: it already is. If, one the other hand, *x* does not pre-exist the change, then *y* can come to be only by way of a radical emergence *ex nihilo*. But these are just the two options Parmenides reads into (i) and (ii).

Accordingly, if Aristotle's reply to Parmenides is to be successful, the product of a coming to be—(*y*)—must be nonidentical with the antecedently existing thing, *x*; and that, Aristotle wants to claim, is precisely how things turn out on a constituent interpretation of the product of a coming to be. On that interpretation, *y* is the φ-ish *x*; and the φ-ish *x* is a composite whose proper constituents are the antecedently existing *x* and the universal φ. But since a composite is nonidentical with each of its proper constituents, *x* and *y* turn out to be nonidentical.

While he thinks that his constituent interpretation of the things that come to be gives this result, Aristotle would deny that we get the requisite nonidentity if we endorse either a relational account of the character of familiar particulars or the extreme nominalist's syncategorematic reading of predicate terms. Aristotle would claim that on the extreme nominalist's account, we have a single thing before and after our change: we have *x* and nothing else. After the change, a new predicate term—'φ'—is true of *x*; but since the extreme nominalist denies that there is any entity over and above *x* corresponding to that term, the extreme nominalist must deny that its application to *x* does anything to alter the ontological landscape. Accordingly, the extreme nominalist must deny that what exists before the change is nonidentical with what exists after the change. But, Aristotle would claim, the same is true of the philosopher who endorses a relational account of character. On that view, the upshot of our change is that *x* stands in some new nonmereological relation to an item that has the appropriate

form of character nonderivatively; but since the relationist construes that item as a transcendent entity, the relationist must deny that *x*'s standing in the new relation does anything to alter the ontological census. There, where *x* is, we have no new entity: before the change, we had *x* and that is all we have after the change.

And Aristotle would reject the reply, by either the extreme nominalist or the relationist, that since for *y* to exist is just for *x* to be *φ*, we do, in fact, have a new entity once it is true that *x* is *φ*. He would insist that unless it is a claim expressing a constituent interpretation of the product of our change, the reply expresses nothing more than the decision to adopt a linguistic convention that allows us to abbreviate the phrase 'the *φ*-ish *x*' by the symbol '*y*'; and Aristotle would deny that any such decision on our part can bring it about that a new nonlinguistic entity exists.

3.

So Aristotle's constituent approach to character has its roots in the idea, first, that only things that are composite can come to be and, second, that what comes to be is always something with a distinctive form of character. Nonetheless, the constituent approach can appear problematic to someone with Aristotle's philosophical commitments. Although he wants to claim that familiar particulars have a complexity of structure that goes beyond the metaphysical picture delineated in the *Categories*, the Aristotle of the hylomorphic theory wants to preserve the core intuition motivating that early treatise, the intuition that familiar particulars—things like "a certain man" and "a certain horse"—are genuine substances ($2^{a}12$-15). Aristotle, however, thinks, first, that substances are thorough going unities and, second, that they are things whose characteristic forms of being are irreducibly basic or autonomous ($1037^{b}27$). A constituent ontologist, by contrast, tells us that familiar particulars are composed of a plurality of metaphysically prior objects and that the form of being a given particular exhibits derives from the independently identifiable forms of being of its constituents. But, then, it is difficult to see how one can hold both that familiar particulars are genuinely substantial and that they derive their character from the ontologically more fundamental items that compose or constitute them.

This tension is, of course, a central concern for Aristotle. The tension occupies him in a variety of contexts, but it receives its most detailed treatment in the middle books of the *Metaphysics*. The focus there is the concept of form. What Aristotle seeks to show is that if we understand

form as he does, we can consistently hold both that familiar particulars are composites that derive their character from their constituents and that they display the sort of irreducible unity and being that qualify them for status as substances.

The problem of substantial unity and the problem of the autonomy of substantial being are intimately related, but towards displaying Aristotle's strategy for relieving our tension, let us begin by looking at the problem of unity. The threat to unity that seems to accompany a constituent analysis comes out in a certain picture of the structure of familiar particulars. On that picture, a familiar particular is nothing but a plurality of completely independent items loosely tied together by some sort of additive or summing relation. The constituents of the particular are independent not just in the sense that it is possible for each to exist apart from the configuration that is the relevant particular, but in the stronger sense that it is possible for each of them to exist apart from any such configuration. So each item constituting a concrete particular is self sufficient; each is capable of existing in isolation, apart from any constituting context. It is a merely contingent fact about the item that it is a constituent at all. As Aristotle sees it, this picture takes familiar particulars to be captured by the formula:

this plus this plus . . . plus this,

where the different occurrences of the pronoun pick out the various constituents of the particular and the 'plus' (*kai*) expresses the summing relation that contingently connects them.[10]

This formula expresses nicely the accounts of familiar particulars found in those of Aristotle's predecessors who endorsed the immanentist or constituent strategy. Aristotle points to Empedocles as a practitioner of the strategy ($997^{b}30$-31), and for him concrete particulars are nothing but bundles of various quantities of the four elements. It is plausible to construe Democritus too as an immanentist, and he identified familiar particulars with conglomerations of atoms. In both cases, a familiar particular is just a plurality of metaphysically independent and self sufficient items—"thises"—contingently tied together by some merely additive relation. Aristotle concedes that this picture is one that conflicts with the idea that things like "a certain man" and "a certain horse" have the sort of thorough going unity characteristic of genuinely substantial entities; but he wants to

[10] See, in particular, 1043^{b}5-14, where we meet what is essentially the formula I lay out.

deny that the picture is mandatory for practitioners of the constituent approach to character. In particular, he wants to claim that his own hylomorphic version of that approach provides the resources for preserving both the intuition that substances are fully unified objects and the intuition that things like "a certain man" and "a certain horse" are substantial.

The threat to substantial unity, Aristotle thinks, derives from the idea that each of the items functioning as constituents of a familiar particular is an independent and self sufficient entity—a "this" that can exist apart from any constituting context. Given that idea, Aristotle thinks, the best a constituent ontologist can do to accommodate our intuitions about the unity of familiar particulars is to posit some merely conjunctive relation; and that, he concludes, delivers nothing more than aggregates that fit the formula "this plus this plus . . . plus this." What Aristotle wants to claim is that the hylomorphic account of familiar particulars rejects the idea that the constituents of familiar particulars are, one and all, independent and self sufficient in this way. He concedes that the matter constitutive of a familiar particular is a "this"—it is a potential object of ostension that can exist apart from the particular as an object in its own right ($1033^{b}20$-24); but he denies that the same is true of the form copresent with the matter. He denies that form is a "this, a definite object" ($1033^{b}23$); it is something such that necessarily it exists only in a constituting context. Its categorial form permits it to exist only as a component in a familiar particular.

The idea that form's existence is tied to its role as constituent gets expressed in a number of ways. In *Metaphysis* Z.8, we are told that form is a "such" ($1033^{b}22$). The idea is that form is necessarily or essentially something that is predicated of one or more subjects, one or more independently existing "thises." The subjects for the prediction of the form are, of course, the antecedently existing items that count as matter for a particular of the appropriate kind;[11] and in each case, the form is just *how* the matter is, *the way* the matter is. Although the form can exist apart from any one of the items that count as its subject or matter, it is impossible for it to exist without being predicated of some matter or other. What is just the way some matter is cannot exist without some matter to be that way. So form is not a "this," but a "such"; and where it is predicated of some matter, we do not have a mere conjunction of independent and self sufficient "thises." The familiar particular is not a "this plus this plus . . . plus this"; it is, as Aristotle tells us, a "this such." It is not just a plurality of numerically distinct

[11] For the idea that the form is predicated of the matter see not just $1033^{b}20$-24 but also $412^{a}17$-21, $1029^{a}20$-23, $1038^{b}1$-7, and $1049^{a}27$-36.

items additively conjoined; it is something with a predicative structure. We have items with categorially different structures and those structures fit each other to yield a predicative complex; we have distinct items that are categorially fitted out to yield, when copresent with each other, a single integrated structure.

It is, however, easy to misunderstand the nature of this predicative structure. One might suppose that it involves three items—the matter, the form, and a relation of predication tying the matter and form together. The assumption would be that numerically different items can be joined only by way of a further item. The difficulty with the assumption is its obviously regressive nature. Not surprisingly, Aristotle rejects the assumption. While conceding that other versions of the constituent strategy may require some sort of linking mechanism, Aristotle denies that any such mechanism is required on his own hylomorphic version of that strategy (1045^{b}8-21). He wants to claim that the proximate matter and the form constitutive of a familiar particular are categorially suited to deliver the required unified composite all on their own (1045^{a}22-34); and it is, of course, because the form is a "such" that this is so. The point here is that it is only if we construe form as a "this" that we will be misled into supposing the need for an additional linking constituent. In the hylomorphic theory, the form, so to speak, carries its own linkage; this is just what its being a "such" comes to. Here, it is useful to recall a comment Aristotle makes in *De Sophisticis Elenchis 22*. He tells us that it is only if we construe predicated entities as "thises" that we will find ourselves confronted with the regress at work in the Third Man Argument (178^{b}37-38).

So form is a "such"; and as something whose very nature is to be predicated of something else, a "such" carries its own predicative link. No third entity is required to tie a "such" to its "this". It is, however, a mistake to suppose that the slogan "Form is a such" implies that there is just a single style of predicative linkage associated with all forms. Here, we are better advised to attribute to Aristotle what Frank Lewis calls the Content Requirement,[12] the idea that the linkage carried by a form is dependent upon and so varies with the content of the form. There is, then, no single linkage expressed by the term 'predication'. What counts as predication varies with the form that together with the appropriate sort of matter constitutes a particular kind of composite.

[12] Lewis 1995.

The set of themes associated with the claim that form is a "such" has frequently been compared with themes we meet in Frege.[13] In Frege, the themes bear on the unity of a thought or propositional content. The Fregean view is that the items making up a single propositional content have to have the appropriate categorial form. We need a complete or saturated entity—an object—and something incomplete or unsaturated—a concept. The two fit each other to yield a single unified thought content.[14] In Aristotle, the theme bears on the unity of familiar particulars, but the claim is analogous. If we are to have a thorough going unity, we need constituents that fit each other: we need a complete or saturated subject of predication—a "this"—and an incomplete or unsaturated predicative constituent—a "such." The resulting composite is a single unified structure—a "this such."

In *Metaphysics* Z.17, the idea that the constituents making up a familiar particular have distinct, but complementary categorial structures comes out in the contrast between what Aristotle calls "elements" and what he calls "principles" ($1041^{b}11$-33) The elements of a familiar particular are the materials out of which it is composed; and Aristotle argues that no list of such materials, however long, is sufficient to provide a recipe for the existence of the relevant particular. The elements are independently existing "thises." Accordingly, all of them can exist without the particular itself existing. Something more is needed to complete the recipe, and what is needed is not another "this," a further element. To complete our recipe for the existence of the particular, we need to identify the way the relevant elements are put together, the way they are structured or organized. That further feature makes the plurality of elements a single unified structure; but to play that role, it needs to have a categorial form distinct from that of the various elements it unifies. To bring out the contrast, Aristotle calls the further constituent a principle, and he tells us that it is the form of a thing that is the principle that organizes and unifies the elements.

So forms are "suches" or principles rather than "thises" or elements; and because they are, there is a structure to familiar particulars over and above that associated with a mere sum or aggregate. We have a predicative structure: each familiar particular is a "this such" rather than a "this and a this" and Aristotle insists that the relevant predicative structure is the right structure. Forms are "suches," but they are *tode ti* constituting "suches." The *tode ti* (this something) epithet accompanies Aristotle's discussions of

[13] See, for example, Loux 1991, chapter 4.
[14] For the Fregean view, See Frege 1882.

substance from the *Categories* onwards ($3^{b}10$). Most commentators take the epithet to be an expression true of each substance; but I have found it useful to treat the epithet as a schema with the pronoun *ti* ('something') serving as a sort of placeholder for substance kind terms.[15] As I read him, Aristotle is claiming that for each substance, there is some true substitution instance of the schema: thus, 'this geranium', 'this dog', and 'this human being'. On my reading, the appeal to the schema highlights the idea that each substance is an individual instance or a particular member of a substance kind; that, Aristotle wants to say, is what being is for a substance.

Understood in this way, the epithet applies only to the familiar particulars the *Categories* calls primary substances. It does not apply to the forms constitutive of those particulars: to repeat, forms are "suches," not "thises." Nonetheless, it is in virtue of the predication of a form that there are things to which the epithet as I have understood it applies: the predication of a form yields something that is an individual instance of a substance kind. Forms, then, are *tode ti* constituting universals: their predication yields composites that are things like "this geranium," "this giraffe," and "this human being"; and when Aristotle applies the *tode ti* epithet, as he sometimes does, to form, this is what he is telling us.[16]

So forms are universals whose predication of the matter delivers individuals falling under substance kinds. Form, then, is the principle of individuation. Standard accounts of Aristotle's metaphysics seem to be denying this. They tell us that matter is the principle of individuation; but what they are calling "the principle of individuation" is something quite different from what I mean by that label. What they call the principle of individuation would be more appropriately called the principle of numerical diversification. They have in mind a point we mentioned earlier. They see that as a constituent ontologist, Aristotle is committed to the thesis that it is impossible for numerically distinct composites to have all and only the same constituents; they also see that all the particulars of a given substance kind have numerically one and the same substantial form; so they conclude that the different particulars must have numerically distinct parcels of the sort of matter that is constitutive of particulars of that kind; and they have the famous comment about Callias and Socrates at the end of Z.8 as a proof text for the claim that Aristotle holds the view they delineate ($1034^{a}5$-8).

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[15] See Loux 1991, 29-32.

[16] See, for example, $1029^{a}27$-28, $1049^{a}35$-36, and $412^{a}7$-8.

Of course, they are right in attributing this view to Aristotle; but the term 'individuation' is not quite the right term for identifying the problematic surrounding the comment from Z.8. A principle of individuation should be that in virtue of which a thing is marked out as an individual falling under its proper substance kind; and for things like "a certain man" and "a certain horse," it is the form that plays that role. The matter of which the form is predicated lacks the articulation characteristic of the relevant substance kind; it is, as Aristotle puts it, only potentially an individual member of the kind. It is in virtue of the predication of the appropriate form that there actually exists an individual instance of the kind. So the form is what first delivers a thing with the individuality characteristic of the members of a substance kind. To use Fregean language once again, we might say that form is a kind of function from matter to an individual member of a substance kind.

So the complex that results from the predication of a form is not a mere aggregate; it is an individual instance of a substance kind. We can, however, envision a critic objecting that the individuality we meet here masks an underlying plurality. The critic will insist that we still have two things—a matter and a form, so that at the end of the day the hylomorphic theory fails to invest familiar particulars with the kind of unity required for status as substance. Our critic is not satisfied with Aristotle's attempts at contrasting hylomorphic compounds with mere heaps, bundles, and collections. The critic insists on higher standards of substantial unity than those guiding the hylomorphic analysis. Aristotle would respond that in so doing the critic puts more pressure on the concept of unity than it can bear. The critic is assuming that there is some determinate content that is pure and unalloyed unity, some substantive property that is expressed by the term 'one' taken all by itself. Aristotle, however, rejects this assumption. He thinks that the term 'one' lacks a complete sense when taken in isolation.[17] Like the term 'being', 'one' expresses a complete content only when supplemented with a count noun; and in the case of the familiar particulars that constitute the focus of Aristotle's concern, those count nouns are sortal terms expressing the various biological species. There is no such thing as just being one; there is, instead, being one geranium, one giraffe, and one human being. But it is precisely things like one geranium, one giraffe, and one human being that the hylomorphic theory delivers. Things like these are just what results from the predication of a substantial form of a parcel

[17] See, again, $996^{a}5$-8, $1001^{a}3$-8, $1053^{b}9$-15. See also $1087^{b}33$-$1088^{a}14$ and $1053^{b}24$-$1054^{a}19$.

of the appropriate matter. The critic has it wrong: there is no unity over and above the kind of unity guaranteed by the hylomorphic theory. The composites the theory delivers have the only kind of unity it makes any sense to demand.

But why can the theory be depended upon to deliver this result? The answer, I think, is found in a claim that Aristotle repeatedly issues, the claim that being and unity go hand in hand.[18] For appropriate *K*, being a *K* and being one *K* are necessarily coextensive: necessarily, a thing is a *K* if and only if it is one *K*. But, of course, the hylomorphic theory gives us things like a geranium, a giraffe, and a human being. What it is for a geranium, a giraffe, or a human being to exist is just for the appropriate form to be predicated of a parcel of the appropriate matter. But, then, in giving us things like a geranium, a giraffe, and a human being, the theory gives us the paradigmatic cases of unity—one geranium, one giraffe, and one human being.

4.

So it is because it gives us things with the appropriate form of being that the hylomorphic theory can be depended upon to give us things with the appropriate sort of unity. But, then, we are going to be satisfied with Aristotle's final word on the problem of unity only if we do not have worries about the forms of being associated with hylomorphic compounds. We need to know that the forms of being characteristic of geraniums, giraffes, and human beings are all irreducibly basic forms of being rather than mere constructions out of more fundamental lower level forms of being. Accordingly, we will concede that Aristotle has succeeded in investing things like "a certain horse" and "a certain man" with a form of unity sufficient for status as substance only if we are convinced that he has a compelling reply to our second problem, that bearing on the autonomy of the forms of being we meet in hylomorphic composites. The difficulty here, recall, is that, for a constituent ontologist, the form of being associated with any arbitrary composite derives from the independently identifiable forms of being associated with the ontologically more basic things that are its constituents. But, then, the constituent ontologist's account of that form of being would seem to be inevitably reductive; and if it is reductive, then Aristotle is forced to deny that hylomorphic complexes enjoy autonomous forms of being. Substantial being, however, is autonomous being. Since he holds that

[18] See, in particular, $1003^{b}23$-33; but see also $1054^{a}13$-19.

they are matter/form composites, it seems that Aristotle must deny that familiar particulars are genuinely substantial.

Now, the fact is that constituent ontologists have typically endorsed reductive accounts of the form of being associated with what Aristotle construes as substance kinds. Certainly, that would seem to have been the thrust of the accounts presented by the constituent ontologists (like Empedocles and Democritus) with whom Aristotle was familiar, and the same is true of modern defenders of the constituent approach. Think, for example, of the classical defenders of either the bundle or substratum theory. They analyze the forms of being characteristic of familiar particulars in terms of elementary sense properties—things like colors and shapes. But while the standard examples of constituent ontologies are reductive in this way, it is possible to be a constituent ontologist without endorsing a reductive account of the forms of being associated with the various kinds to which familiar particulars belong; or at least Aristotle thought so.

Aristotle wants to deny that every form of ontological analysis is reductive. He wants to claim that it is possible to be a constituent ontologist while holding that the forms of being/character associated with the various biological species are autonomous forms of being. To see how this is to go, consider a theory that tells us that all the members of a kind, *K*, are composites of ontologically more basic entities, but holds that one of the constituents of the *K*'s is an item that meets the following two conditions; first, it is necessarily such that it is a constituent in all and only the members of *K* and, second, it has no constituents of its own. So the theory is telling us that there is an object, *x*, such that (1) necessarily a composite has *x* as a constituent just in case the composite is a member of *K* and (2) *x* has no constituents. Since *x* has no constituents, whatever character or form of being it has, it has nonderivatively; but that character or form of being is such that necessarily anything that has *x* as a constituent is marked out as a member of *K*. The character may not exhaust the form of being associated with *K*. There may be more to being a *K* than having *x* as a constituent. Nonetheless, *x* induces a form of being necessarily idiosyncratic to the members of *K*, and it does so primitively or unanalyzably. Accordingly, the theory is telling us that while the members of *K* are composites of more basic entities, one of their constituents nonderivatively and nonredundantly induces a form of being *sui generis* to the *K*'s. Now while a constituent theory, this theory does not present us with a reductive account of the form of being exhibited by all and only the *K*'s. Since it holds that that form of

being incorporates an unanalyzably basic component *sui generis* to the *K*'s, it displays the form of being as autonomous.

What Aristotle wants to claim is that for the case of each biological species, his own hylomorphic theory provides precisely the sort of nonreductive, yet constituent account that our imaginary theory provides for the kind, *K*. His theory tells us that for each lowest level biological kind, there is an unanalyzable universal such that necessarily that universal is a constituent in all and only the members of the kind. It is, of course, the substantial form associated with a kind that is the relevant universal. Since the form is a "such," a predicated entity, its being a constituent in a given composite presupposes another constituting entity—a "this" or subject of which the form is predicated. That subject is a parcel of whatever sort of stuff serves as proximate matter for composites of the relevant kind. Since the form of being unique to composites of that kind derives from both their matter and their form, the form does not exhaust the character of the kind. It is, however, what first or initially induces the relevant form of being. What plays the role of matter is something that can exist outside the context where we have a member of the kind. It is only with the predication of the form that we have a composite of the relevant kind. Furthermore, whereas the matter is itself a composite that owes its own characteristic form of being to the lower level entities that constitute it, the form has no constituents and, consequently, it has its own distinctive character nonderivatively. Accordingly, while there is nothing distinct from the form that is the principle of its character, it is the first principle of the form of being characteristic of members of the associated kind. It is, as Aristotle puts it, their primary substance.

So the form is necessarily such that it is instantiated where and only where the associated species is instantiated. The form, we might say, is equideterminate with the species. It is not, however, coextensive with the species. Indeed, their predicative ranges do not even overlap. The form is predicated exclusively of the various parcels of matter with which it is copresent. In virtue of each such predication, we have an individual member of the appropriate kind, and it is of its members that the species is predicated.

Now, throughout the middle books of the *Metaphysics*, Aristotle argues for the sort of nonreductive constituent theory I have been describing. In Z.4 he tells us that the only autonomous forms of being that we meet in the everyday world of concrete particulars are those associated with the various species in the category of substance ($1030^{a}11$-12). He goes on in sub-

sequent chapters to attack different attempts to provide reductive accounts of those forms of being. In Z.13, he argues against a Platonic reductionism that seeks to make the substance of the members of a kind, *K*, a universal more general, less determinate than *K*; and the argument is that only a universal equideterminate with *K* can succeed in nonredundantly inducing precisely the form of being characteristic of *K*.[19] In Z.17, the target is a materialist reductionism that seeks to make the material elements of the members of a kind, *K*, their substance. As we have noted, the argument there is that since those elements can exist outside the context where there are *K*'s, they fail to deliver the form of being characteristic of the *K*'s; it is only when organized by a principle equideterminate with *K* that the elements give us the form of being in question. In H.2, the target is a kind of modal reductionism that identifies the substance of a *K* with what is potentially a *K*. Again, the argument is that what is only potentially a *K* is something that can exist in a context where there are no *K*'s. What is required is an actuality that necessarily induces precisely the kind of character distinctive of the *K*'s ($1043^{a}3$-11).

It is, of course, form that is Z.17's principle and H.2's actuality; and it is the equideterminacy of form and species that is the central theme of those two texts. That equideterminacy is, however, only half of what is required if we are to have the sort of nonreductive form of constituent ontology that Aristotle envisions. It is also required that form have its own distinctive character nonderivatively, and that requires that it have no constituents of its own. That requirement is likewise a central theme in the middle books. As we have seen, the central reason for thinking that familiar particulars are composite entities is that they come to be and pass away. It is no surprise, then, that we find Aristotle arguing in Z.8 (and elsewhere) that form is both ingenerable and incorruptible ($1033^{a}30$-$1033^{b}19$). A further reason for thinking that a given item is composite is that it is subject to definition. Definition, one might suppose, always involves an analysis into metaphysically prior items. Forms, however, are definable, so it is no surprise that we find Aristotle undermining the supposition about definition and analysis. While conceding that the supposition holds for the definition of composites, Aristotle devotes virtually all of the very long and difficult Z.10 to a defense of the claim that a form can be defined without reference to any entities distinct from the form itself.

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[19] This, at least, is one of the things Aristotle is arguing for in the very difficult and controversial Z.13. See, especially, $1038^{b}8$-14 and $1038^{b}17$-24.

All of the ideas I have been discussing play important roles in Aristotle's attempt to display his own hylomorphic theory as a form of nonreductive constituent ontology but, perhaps, the middle books' most striking expression of Aristotle's antireductivism comes in a claim we meet in both Z.17 and H.3, the claim that what plays the role of primary substance is the nature associated with a kind.[20] Central to Aristotle's conception of a nature is the idea that the form of being associated with a natural kind expresses itself in a pattern of behavior peculiar to members of the kind. Since the focus is a substance kind, the form of being we meet here must be autonomous; and that means that its source must be an unanalyzably basic causal principle equideterminate with the kind; and, as Aristotle argues, the form is just such a principle.

What the identification of form and nature adds to the case for an antireductive form of constituent ontology is the set of teleological themes we meet in *Physics* II. The nature is the *telos* or final cause. On the one hand, we have the process of biological development that living beings undergo; and the nature in the guise of the mature flourishing organism displaying the form in its fully developed state is the final cause of that process. On the other, the nature imposes a top down pattern of organization on the fully developed living being. In that pattern, the different parts of the organism get their identity from the roles they play in the overall functional economy dictated by the nature. So the teleology of the nature is holistic. The nature gives rise to a form of life in which the whole organism in its mature state is prior both to the stages making up its biological development and the things that count as its parts. The nature, however, is the form; therefore, we have a constituent insuring that its containing composite has a history and structure that resist the sort of treatment a reductionist wants to provide. So a constituent ontologist is not committed to a reductive account of familiar particulars. One can hold that things like "a certain man" and "a certain horse" are composites of ontologically more basic entities without denying that they have the unity and autonomy characteristic of substances.

[20] See 1041b27-33 and 1043b21-23. For the canonical characterization of nature, see *Physics* II.1.

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