

WHAT IS A FORM IN ARISTOTLE'S HYLOMORPHISM?¹

Abstract

The paper focuses on the following question in Aristotle's hylomorphism: what does a natural form's essence involve? The main contenders for an answer to our central question run as follows:

- (1) [PURISM] A form is pure; it is essentially non-matter-involving; its definition makes no reference to any material items.
- (2) [COMPOUND FIRST] Form and matter are abstractions in thought derived from the compound itself. The compound is a material (type of) object, and is metaphysically basic.
- (3) [TRUE GRIT] A form is essentially matter-involving; its own definition refers to some appropriate sorts of material item. These last are in some sense genuinely "material."

Setting to the side the exegetically implausible [COMPOUND FIRST] view, I shall compare [PURISM] with [TRUE GRIT], and argue in favour of the latter.

Keywords: Aristotle; Hylomorphism; Essentialism; Definition; Form; Matter; Change

1. The Central Question

There are several important questions about Aristotle's hylomorphism. I shall focus on the following question: what does a form's essence involve? My interest is in "natural" forms: forms of physical and changeable compound (types of) objects consisting of matter and form: Socrates, Bucephalus, human, or horse.

Here are the main possible answers to our central question:

(1) [PURISM] A form is pure; it is essentially non-matter-involving; its definition makes no reference to any material items.

This is the view adopted by Frede and Patzig but also the view of the so-called “spiritualists.”² Interestingly, this view is also shared by Aristotelian functionalists: they think that natural form is essentially specifiable simply in terms of functions, *telê*, potentialities for change, etc.³ In [PURISM] a form (or its specification) somehow implies the claim that if a form is to be realised it *must* be realised in some type of matter or other, or in some specific range of matters. A form’s specification also grounds the claim that the compound enformed by the relevant form *must* be material, changeable, and have the necessary features characteristic of its kind.

(2) [COMPOUND FIRST] Form and matter are abstractions in thought derived from the compound itself. The compound is a material (type of) object, and is metaphysically basic.

Because there are *prima facie* problems with this view (it gets Aristotle’s priority claims the wrong way around), I shall set it to the side. The third option is:

(3) [TRUE GRIT] A form is essentially matter-involving; its own definition—not just that of the compound—refers to some appropriate sorts of material item. These last are in some sense genuinely “material”; they are not fully specifiable in terms of, or reducible to, formal, telic, functional, etc. items.

In what follows I shall seek to compare [PURISM] with [TRUE GRIT], and argue in favour of the latter.

2. Types of Definition

The notion of definition is important in this discussion as an Aristotelian definition is an account of the *definiendum*’s essence, also explaining why the *definiendum* is as it is.

Presumably it also grounds the further, non-essential but necessary features of the *definiendum*.

A dialectical reason for raising the question of definition is that proponents of [PURISM] typically make a distinction between definitions of compounds and definitions of forms. Thus, they interpret Aristotle's claims that look like versions of [TRUE GRIT] as referring to definitions *only* of compounds. They argue that matter is indeed mentioned in the definition of certain entities. But these entities are strictly compounds alone. The definitions of forms, by contrast, do not have any material components, thereby conforming to [PURISM].

A different way in which to make a similar move is to distinguish between a "narrow" and a "wide" conception of definition.⁴ Aristotle allows for a wide version of definition that mentions form as well as matter (and perhaps other causes too; see, e.g., *De Anima* I.1, 403a24-27), a type of definition that is usually of the compound alone. But his narrow type of definition, which is in some sense basic, is of form and form alone. The driving idea is, once again, [PURISM].

To clarify: the *object* of a hylomorphic definition—what this definition could have as a *definiendum*—is either a compound, or a form, or matter. This last option is usually taken to be a non-starter as Aristotle claims that matter is in itself indefinable (*ahoristos*) and unknowable (*agnôstos*; *Metaph.* Z.10, 1036a8-9; Z.11, 1037a25-27). But I shall raise some doubts about this exclusion of matter shortly. The *definiens*, on the other hand, could be either a long story involving formal, material, final, and efficient causes, or a succinct account of the basic entity—just the form—responsible for the *definiendum*'s being.

Interpreters who rely on this twin distinction take their cue from Aristotle's own claim in *Metaphysics* Z.10-11 that definition is of the form (and of the universal) alone (1035b33-1036a1; 1036a28-29). But does this claim imply that an Aristotelian definition has as a

possible *definiendum* only a form? Or is form the only possible or correct *definiens*? Or both? It seems plausible to think that the form is the fundamental *definiens*: for Aristotle argues that compounds and matter are definitionally posterior to form (Z.10, 1034b30-32; b4-22). This entails, first, that the *definiens* in terms of which compounds and matter are defined (*but not conversely*) is the form. And, second, that compounds and matter are, after all, appropriate Aristotelian *definienda*, as they are definable in terms of the form (but not conversely). This second implication also seems to cast doubt on the view that matter is, for Aristotle, utterly indefinable. His claim about matter's indefinability will have to be attenuated in some way.

If the claim that form is the fundamental *definiens* is correct, however, it seems that all other types of definition—of compounds or other objects; wide or narrow—are strongly dependent on the form and its own nature, specified in its own definition. What the definition of form contains, then, will determine what the definition of the relevant compound contains, even if the definition of the compound mentions anything extra; even more so if the definition of the compound just is the definition of its form. It is not open to us to separate too sharply between types of definition when dealing with natural form. The conceptual distinction is, of course, coherent and welcome. But the strong separatist approach is motivated only by the idea that we should keep form pure or immaterial even if the compound is essentially impure or matter-involving. This, however, is another version of [PURISM], not an independent argument for it.

There are deeper reasons for anti-separatism. First, a form is supposed to be ontologically, definitionally, and explanatorily prior to the compound and its matter (or even its material parts). Second, it (or its specification) grounds the necessary features characteristic of the compound and its matter. Third, it is a unifier of the compound and/or its material parts (what accounts for its being one single kind, as opposed to a heap or an accidental compound). Any attempt to separate the definition of the compound from that of

the form, therefore, seems futile. Our answer to the central question will determine what the definition of a compound will include.

3. The Causal-Explanatory and the Unity Models of Essence and Form

In *Metaphysics* Z.17 and H.2-4 Aristotle makes a fresh start in his inquiry into substance suggesting that we should consider it as a principle and a cause (1041a9-10). This is a difficult but rewarding chapter as it combines concerns about definition and demonstration (in the manner of *Posterior Analytics* II), the ontological, definitional, and explanatory priority of essence and form, as well as its role as a unifier of the compound and its material parts.

First, *Metaphysics* Z.17 extends the *Posterior Analytics* demonstrative and definitional model for process-types (such as thunder and eclipse) to substance-kinds. Our present interest is in kinds or types (understood as universal hylomorphic compounds at Z.10, 1035b27-31) not tokens or individuals (particular hylomorphic compounds).

Second, Aristotle presents a sample explanatory proof and a definition about the kind human (1041b1-9):

Arrangement of this sort belongs to being a human (the essence of the human-kind).

Being a human belongs to this sort of flesh, bones, etc.

Arrangement of this sort belongs to this sort of flesh, bones, etc.

The related definition runs as follows:

Human _[TYPE] =_{def} bones, flesh, etc. thus-and-so arranged because of being a human.

The third important point made in *Metaphysics* Z.17 is related to the apparent circularity of this last definition. Aristotle insists that being a human, the essence of the human-kind, is only an abstract way of characterising the *ousia* of this substance-kind (*logikôs*: 1041a27-28). This abstract notion is incomplete unless we invoke causal concepts

such as efficient, final, or even material-grounding causation (1041a28-32; cf. *APo.* II.11, 94a20-24) depending on the type of *definiendum* we are dealing with. In the case of a process-type, such as thunder, the *ousia* of the phenomenon is identified with the efficient cause, the quenching of fire in the clouds. In the present, substance-kind case the *ousia* of the human-kind should be identified with a final cause: e.g., being for the sake of realising a certain sort of rational life.

In Aristotle's conception of essence and form, then, these notions seem to answer at the same time both the "what is it?" and the "why is it (as it is)?" questions. The corresponding middle term (or B-term) of the demonstration picks up the essence (*ti ên einai*), the form (*eidos*), the cause (*aitia*) or principle (*archê*), and the substance (*ousia*) of the *definiendum*. It plays a similar role relative to the material items (bones, flesh, etc.) and the arrangement characteristic of the human-kind.

This picture sets several important constraints on the content of an essence or form, the referent of the B-term. How can a form's characterisation explain or ground the claim that this sort of arrangement belongs to this sort of flesh, bones, etc.? How can it determine the nature of the relevant sort of bones, flesh, etc. as well as the nature of the appropriate type of their arrangement? Moreover, how can it underwrite the necessity of their presence for the human-kind? Put differently: how can a form be the principle or cause Aristotle claims it is? These questions should constrain our understanding of form and its nature, and so are crucial to adjudicating between [PURISM] and [TRUE GRIT].

This, however, is not the whole story of *Metaphysics* Z.17. In the second part of the chapter Aristotle advances a regress argument to show that the form can be neither a further material item alongside the compound's material parts, nor an entity consisting of such material parts (Z.17, 1041b11-33; H.3, 1043b4-14; cf. Z.12 and H.6). He assumes that the substance-kind is a unified whole in which the relevant material parts are one in a more

robust fashion than the way in which an accidental compound (such as pale human) is one, or the even looser way in which a heap or the *Iliad* are one. He suggests that the essence or form is the principle or cause of this unity but asks what kind of entity it has to be to play this unifying role. If it is just a further material item alongside the other material parts of the compound, then it cannot account for unity, so there has to be a further principle of unity over and above this form. But if this extra principle of unity is again understood as a material element, we must seek for yet another principle of unity, and so on and so forth *ad infinitum*. If the form is itself made of material elements, then it cannot be the unifier, so we have to posit an extra unifier. If this extra unifier is a material item or made of material elements, a similar infinite regress is regenerated.

This argument supports the idea that a form is not a material item but an entity of a different ontological order: it is the substance of the compound, the cause or principle of its being what it is (1041b25-28). It is responsible for the robust unity of a substance-kind: the bond of its material parts into one single whole, as opposed to a heap; but perhaps also the integral unity of, for instance, the flesh, bones, etc. with the relevant sort of arrangement characteristic of the human-kind in our previous example.

Further, in arguing that a form is not “made of elements” Aristotle suggests that a form is somehow “simple” (*haploun*) but not a compound (*suntheton*), or at least not a compound in the manner of substance-kind compounds. Does this imply that a form is an atom with no complexity whatever, or is complexity of a certain sort allowed? Put differently, the question is what kind of unity a form itself must possess if indeed it is the principle of unity Aristotle claims it is.

This is a difficult question, which requires an answer in terms of extremely controversial parts of Aristotle’s metaphysical picture. Let me outline a possible reply. In *Metaphysics* Z.4-6 and 10-11 Aristotle argues that an essence is a primary (*prôton*) or *per se*

(*kath' hautō*) entity in that it is “said not by something being said of something else,” where the related items are mutually different in nature [Z.4, 1030a2-11: *mê allo kat' allou*; Z.6, 1031b13-14; a28; 1032a4-6: *hosa mê kat' allo legetai alla kath' hauta kai prôta*; Z.11, 1037b1-4: *mê allo en allô(i) kai hupokeimenô(i) hôs hulê(i)*].⁵

Similarly, in *Metaphysics* Z.17 he contrasts the principle or cause that essence and form is with compound substance-kinds where there is some predication structure in which something is said of something different (1041a23: *ti kata tinōs*; 25-6: *allo kat' allou*). Even if items such as the kind human are not transparently predicationally articulated as they appear not to be said by something predicated of something else, yet they have an underlying predication structure (1041a32-b2). The kind human can be predicationally articulated as this sort of bones, flesh, etc. having this sort of arrangement. If so, we can inquire into the cause or principle which explains why this arrangement belongs to this sort of flesh, bones, etc. As suggested earlier, the answer to this last question would be given in terms of the essence or form, identified with the appropriate type of cause (the final cause in the present example).

The essence or form, by contrast, is a “simple” of some sort. Presumably it is a primary or *per se* entity which is not said by something being predicated of something else, where the items involved are different in nature. This requirement, however, allows for complexity. Suppose that the form is somehow complex. Perhaps it is hylomorphic. Even so, the form can still be primary and *per se* in the sense just adumbrated, and so possess simplicity and unity, provided that its “components” are *essentially inter-dependent*.⁶

To clarify this point, we can consider cases of “lesser” unity starting from the lowest level of unity. In the example of a heap offered in *Metaphysics* Z.17, or in the example of the account which signifies the same as the whole *Iliad* given in Z.4, the items making up the relevant wholes are essentially independent of *each other*. In the case of Aristotelian

accidental compounds such as the pale human the items involved are again essentially independent of each other, although if a pale human exists, it is true that paleness belongs to some human, *and conversely*.

In the marginally higher-level case of unity displayed by the compound pale surface, the attribute being pale is essentially dependent on surface: for to be pale is to be a certain type of colour quality belonging to some particular bodily surface or other. The converse dependence does not, however, hold good: for a surface is essentially independent of being pale. Still this type of unity is not sufficiently exalted. For being pale is not dependent on a surface in that it is itself essentially a type of surface. Rather, it is a non-substance attribute such that it essentially *belongs to* some appropriate type of subject or other, in this case a bodily surface.

An even better type of unity is possessed by the substance-kind compounds of *Metaphysics* Z.17. The human-kind is a certain type of flesh, bones, etc. with a certain sort of arrangement but these last two items essentially depend on being a human, the essence of the kind. For being a human fixes the identity of the relevant sort of flesh, bones, etc., as well as their appropriate arrangement. Further, it explains why the one belongs to the other. There is no converse dependence relation, though, for the essence or form being a human is prior to the other items involved in the definition of the human-kind. Priority is asymmetric.

Can the essence or form itself attain a level of unity even higher than this last? We can return an affirmative answer to this question if the items involved in the form itself are essentially *inter*-dependent. Suppose that the form itself has a hylomorphic structure or complexity. Indeed, this is [TRUE GRIT], the claim I shall argue for in subsequent sections. Thus, the form's schematic definition should run as follows (with “*F*” and “*M*” standing for formal and material items respectively):

Being *F* =_{def} being *F'M'*.

In the present proposal, however, being F' is defined in terms of being M' *and* being M' is defined in terms of being F' . The items internal to the form's own nature are essentially interdependent. If so, the form is not said by something being predicated of something else, where the items involved are *mutually* different in nature; rather, they are *inter*-dependent. Hence, a form can be complex but also possess the relevant sort of primacy, simplicity, and unity.

It is useful, at this juncture, to return to a point raised earlier *en passant*. Talk of a form's "parts," "components," or "elements" should be understood in a weak manner. The items within the form's own essence are not "objectual" or "substantive" parts in the way in which a compound object, for example a human, has hands, legs, etc. Rather, the items involved in a form are perhaps something like its different but incomplete and interdependent "aspects" or "sides of the same coin," provided that these figurative expressions are not understood as entailing that the form's nature contains or (worse) "has" complete and independent entities, such as properties, features, or qualities.

It may be tempting to think that being F' and being M' are identical. But this may be too strong. After all, it seems plausible to retain the minimally notional distinction between the two—the putative formal versus the material items within a form's nature.⁷ What kind of unity, then, does the form possess? Whatever they are, the items within its own essence must be "one" in that they are essentially interdependent: separately incomplete without each other but jointly identical with the form.

The overall picture, therefore, is one in which the primary item *unified by* a form is the substance-kind compound and its material parts, perhaps together with those parts' characteristic structure, arrangement, configuration, etc. In our previous example *what gets unified* is the human-kind. First, the form, being a human, unifies the characteristic human arrangement with the human flesh, bones, etc. For being a human (identified with the relevant

final cause) explains why the former belongs to the latter. This secures the unity of the two items in the first segment of the *definiens*. Schematically:

Being a human unifies <bones, flesh, etc. + their arrangement> (where the angle brackets enclose a unity).

Moreover, the form unifies each of these two items with the rest of the *definiens*. Flesh, bones, etc., as well as their characteristic arrangement, are strongly bonded with being a human, for their identity gets fixed by it but not conversely. This asymmetric dependence of the first half of the *definiens* on the second half, the form, underpins the unity of the entire *definiens*. Thus:

Being a human unifies <bones, flesh, etc. thus-and-so arranged + being human>

This two-tiered unity within the *definiens* underwrites the unity of the *definiendum*, the substance-kind compound.

The crucial question, at this point, is whether the form itself must possess the strong, interdependence-style unity outlined earlier in order to ground this last type of unity of the substance-kind compound. Let us call the strong, interdependence-style unity “heavy-duty” unity. There are two interrelated issues underlying this question:

- (a) Must the form be an atom—a simple, entirely non-complex entity—in order to ground the compound’s unity?

As I argued earlier, a negative answer to this question seems plausible. The form could have structure or complexity provided that it satisfies the “primacy” or “*per se*” condition as sketched above.

- (b) Must the form have a “heavier-duty” unity than the unity it grounds, or could it be equally or even less “one” than the unity it supports?

I have been assuming that a heavier-duty unity is required of form if indeed it is to ground the unity of the substance-kind compound. But this is not a straightforward assumption. In discussing *Metaphysics* Z.17 Kathrin Koslicki argues for the contrary position. She offers the example of a type of glue which is unstable, and so not properly unified, unless the appropriate types of material to be glued together are around. In this case, the glue itself is less “one” than the compound it eventually holds together into one whole.⁸ The difficulty with this example is that it is not sufficiently sensitive to Aristotle’s regress argument: for the glue is itself not the relevant type of principle of unity but just another material element alongside the material components to be glued together.⁹

I conclude that the form’s unity must be such as to block any worries that the substance-kind compound may turn out to be heap-like. Similarly, it must underwrite the compound’s unity in a way that does not resemble unity by continuity, or connection, or addition, or merely predicational unity such as that possessed by the pale human (see Aristotle’s worries about *addition* in *Metaphysics* Z.4-5). Hence, my proposal for the “heavy-duty” unity ascribed to form seems more plausible. This unity requirement constitutes a second sort of constraint upon the nature of form: our answer to the central question about the form’s essence, and our choice between [PURISM] and [TRUE GRIT], should respect this “heavy-duty” unity requirement.

4. What Kind of Entity is a Form?

There is a generic aspect to our central question: what general ontological category does a form belong to? This is linked to the corresponding generic question of what ontological categories the items posterior to form—the compound and matter—fall under. In the case of the compound the answer seems simpler. The compound is an object—either a

particular or token object (like Socrates or Bucephalus) or a universal or type object (like human or horse; Z.10, 1035b27-31 and ff.).

Similarly, matter—whatever it is precisely—seems to conform to this distinction: for there are token-materials (such as these particular written speech elements; or my own nasal matter) as well as type-materials (such as inky speech elements; or exercised human muscles). *Metaphysics* Z.10, 1035a9-17, offers the example of a syllable and the “material elements,” the letters making it up. Further, 1035a17-b3 describes bones and flesh as the token matter into which a particular compound human perishes (see especially the example of Callias at 1035a33).

To understand the status of form, it is helpful to examine Aristotle’s striking identity and non-identity claims made not only in *Metaphysics* Z.10-11 but also in H.3 (101035b31-1036a3; 1037a33-b7; 1043b1-4 & ff.; cf. *Topics* V.4, 133b31-36). He argues that, while soul = being a soul, human $\neq$ being human (or: human $\neq$ being a soul). Against the background of his understanding of universal compounds, the non-identity should be due to the fact that human is a universal compound, a type-object, which *has* an essence or form. Further, its essence or form is *prior to*, and so *non-identical with*, it. The soul, by contrast, is paradigmatically a form and so *does not have*, but *is* the essence or form; it is *identical with* “its” essence or form.

Moreover, it is fair to note that there is a deeper difference between human and being a soul, or more generally between *the (token or type) F* and (the essence/form) *being F*, in respect of logical grammar and ontology. The former is an object (this human or Socrates) or a type-object (human), whereas the latter is a what-it-is-to-be-*F*, an essence [*to ti ên einai tô(i) F*; *to einai tô(i) F*]. The most promising, if unconventional, manner in which to characterise a form such as being *F* is as the essential way or *mode of being* for the (token or type) *F*-object.

Is talk of ways or modes of being excessively mysterious? Not so much. Modern metaphysicians, such as E. J. Lowe, C. B. Martin, and J. Heil employ this conceptual apparatus seriously and, arguably, with considerable success. One reason why they posit ways or modes of being is that they aim sharply to distinguish their views of properties from trope theories in which an object is identified with a bundle of particularised properties (or tropes). They insist, by contrast, that a property is simply a way in which, or *how*, an object is.¹⁰

Here are some crucial features of an Aristotelian way of being:

- (i) It seems to be the ontological correlate of an open sentence such as “*Fx*” or “__ is *F*.” As such it cries out for “saturation,” to use a Fregean term.¹¹ This accommodates Aristotle’s claim that an essence or form necessarily depends for its existence on some particular compound or other existing (unlike implausible, Platonist versions of essentialism).
- (ii) This view is sensitive to the categorial difference that seems to obtain between token- or type-objects, on the one hand, and their essences, on the other.
- (iii) A way of being as such is not to be identified with an essence. The concept of a way of being is general enough to be distinct from that of an essence. For a way of being is not sufficient, by itself, to demarcate an essence from a non-essence. After all, there are many ways of being—being pale, being sun-tanned, etc.—which may be ways for Socrates or for (members of) the human-kind to be without being *essential* ways of being for them.
- (iv) Because ways of being are the ontological correlates of open sentences, the *essentiality* of a way of being can be conceived as the real counterpart to a copula-modifier such as “essentially”: to be Socrates or to be (a member of) the human kind is to be *essentially* human.

- (v) This view respects our intuition that a form is ontologically prior to the items it is the form of: for it makes the latter what they are but not conversely. This asymmetric relation of priority cannot be preserved by views that identify a token- or type-object with its form. For this sort of identity (a congruence and equivalence relation) would be symmetric, while ontological priority is asymmetric, and no relation can be both symmetric and asymmetric (in the same way or sense). Understanding form as a way of being emphasises at the outset the categorial distinctness, and so the non-identity between a form and the corresponding compound. If so, it does not disregard the intuitive idea that a form is ontologically prior to (but not identical with) the token- or type-object it is the form of. Importantly, this result agrees with Aristotle's non-identities noted earlier.¹²

So understood, an essence or form also seems to have the correct logical form to be a unifier. Just as a predicate-term can yield the unity of a predicative statement, similarly being *F* can yield the unity of the material parts of the compound, or of the material parts plus their characteristic arrangement, and so can support the unity of the compound itself. Indeed, the contexts in which Aristotle invokes his identities and non-identities seem to allude to this point. At *Metaphysics* Z.10, 1035b33-1036a3, he remarks that there are parts of the compound and of the form. But the compound is not identical with its form plus its own material parts. Thus, for instance, a particular human (or even the type human) is not identical with being human *plus* its own flesh, bones, sinews, etc. For the latter are not essential to it: they can be gradually or partially replaced; or even, more radically, wholly replaced during a longer span of the compound's life; or they exist in some shape even after the compound human passes away. By contrast, all the "parts" of the form taken together are identical with it: for there is nothing other in a form—in its own nature—than all of its "parts" collectively.

More importantly, at Z.11, 1037a33-b7, Aristotle re-introduces the primacy criterion for the essence or form (1037b3-4; cf. Z.4, 1030a2-11). Understood as the heavy-duty, interdependence sort of unity I suggested earlier, this implies that the “parts” of the form are essentially interdependent and mutually incomplete. All taken together, though, can be identified with the form itself: they just are the form, its very own nature.

At 1037b4-7, by contrast, the *particular* compound is thought also to involve non-essential material parts (e.g., particular cells, bodily parts, etc.), and so cannot be strictly identical with its essence or form. For example, Socrates is not just being a human soul as he also has particular (bits of) bones, flesh, etc. that are not essential to him, and so are not involved in his form, being a human soul. Nor is the compound *merely* coincidentally the same as its essence in the manner in which Socrates and his cultivation constitute an accidental compound.¹³ While the parts of the compound are, in some sense, mutually independent, they are not completely coincidentally bonded like the parts of the cultivated Socrates. For the nature of the specific types—or range of types—of bodily parts of a compound are essentially dependent on, and grounded in, the form itself, for instance being a human (but not conversely). After all, what types of bodily parts a human can have, lose, or replace, at what rate, when, etc. seem to get fixed by the nature of the human-kind, the form being a human. The converse claim does not hold good, however, as the form is essentially independent of the particular bodily parts of the token-compound, which can come and go without any essential change in the compound. Because of this last claim, the compound plus its own material parts do not possess any heavy-duty unity. If so, the compound is not identical with its essence or form as it possesses *in addition to it* such non-essential material parts.

In the context of *Metaphysics* H.3 Aristotle lines up the essence with the form and the actuality (1043b1-2). He adds that, whereas soul = being a soul, human $\neq$ being a human

(1043a34-37). His next observation is that theorists who take the essence as an extra material item alongside the other material elements of a compound cannot accommodate the identity of a form with its own nature or essence (1043b4-5: *ou phainetai dê zêtousin...*). As the regress argument advanced in *Metaphysics* Z.17 suggests, a form is neither just another material item nor itself made of material elements. For, if this were so, a form could not be identical with its own essence, just as Socrates and the human-kind are not identical with their essence. In that case, then, because a form would not, by itself, be the principle of unity, it would involve its own essence *plus* another item, a putative principle of unity for it, just as in the case of compound token- or type-objects.

In particular, if a form were itself a material item, it would have an extra principle of unity, independent of it. If so, its essence would be non-identical with it, for its essence would involve it *plus* the extra principle of unity. If, on the other hand, a form were made of material elements, it would consist of these material elements plus a further principle of unity, which would be non-identical with it. In either case the familiar infinite regress problem would be an additional worry. In Aristotle's view, however, non-identities of this sort apply only to the case of the compound. A form, by contrast, is identical with its own essence. Why is this so? Given my argument so far, the most plausible answer to this question seems to be that the items within a form's essence possess a special, heavy-duty sort of unity. Indeed, as *Metaphysics* Z.11, 1037b3-4, indicates, a form essentially involves items which are not mutually independent in nature [not *allo en allô(i) kai hupokeimenô(i) hôs hulê(i)*]. Because the items within a form's essence are essentially interdependent and separately incomplete, there is no *addition* of anything *extra* or *independent* in a form's essence. If so, taken collectively these items are strictly identical with the form itself: for instance, soul = being a soul. For there is nothing independently or "loosely" added on to the essence of a form, unlike the *Iliad*, heaps, accidental compounds, or even particular

substance-compounds such as Socrates. Rather, a form has what I called heavy-duty unity, which can ground the unity of the substance-kind compound.

5. The Causal-Explanatory Priority Constraint

How does [TRUE GRIT] fare in respect of the causal-explanatory constraint set by the first half of *Metaphysics* Z.17 if compared with [PURISM]?¹⁴ The requirements in question are that a form is ontologically prior to the compounds it enforms in that it makes them what they are but not conversely. It is also definitionally prior to them: for their definition mentions their form, whereas the form is not defined in terms of them. Further, it is explanatorily prior to them and their necessary features: for it explains their being, or why they are as they are; and it also explains why they possess their specific necessary features. Finally, it grounds the necessity of such features (e.g., of *propria* such as a human's *necessarily* being capable of laughing), as well as claims of hypothetical necessity (e.g., if the form of the saw, its specific capacity for cutting, is to exist, a certain range of metallic materials *must* exist).

[TRUE GRIT] takes a natural form as having essentially material items (presumably also change-related items) built into it. These can serve as grounds for the material and change-related features of the relevant compounds. Thus, for instance, being bodily or having bulk of a certain sort are essential ways of being for the compounds, and are within a form's essence. If so, they can explain why the compounds are bodily in the specific way they are, why they have certain material features, why they are changeable in the particular modes they are, etc.

How, if at all, could [PURISM] secure this causal-explanatory priority of form, without invoking extra claims? If a natural form is essentially characterised purely in terms of formal aspects, *telê*, functions, or matter-less potentialities for change, how could it ground

the material and change-related features of the relevant compounds? Take, for instance, hypothetical necessity claims: how could [PURISM]’s form ground the claim that, if the specific capacity for cutting or dividing characteristic of the saw is to exist, a certain type of metal *must* exist as its constituent or proximate matter? Why is the capacity for dividing not merely an abstract geometrical feature of (e.g.) lines cutting or dividing angles?

[PURISM] could, to be sure, conceive of hypothetical necessity as an extra claim, over and above the form’s definition, which describes metaphysically brute facts, as it were, and which, together with the form’s definition, grounds the necessary features of compounds. But if so, it is not the form that is causally and explanatorily prior to the compound and its features. Rather, it is the form *plus* the extra necessity claims that ground the materiality and changeability of the compound. The form would not, therefore, be the cause and principle Aristotle thinks it is.

What about grounding the *necessity* of such features or of hypothetical necessity claims? [TRUE GRIT] renders a form essentially matter-involving. This suggests that the essence-bearers with this form will themselves be essentially matter-involving. In a plausible view of Aristotle’s account of the relation between essence and necessity, an essence or form grounds necessity claims but the converse is not the case. Thus, while being human grounds the necessary capacity for laughing of humans, the converse does not hold good. If this is correct, the compounds enformed by an essentially matter-involving form will themselves be *essentially* matter-involving, and so will *necessarily* have the corresponding material and change-related features.

This would constitute a concrete way in which to ground the necessity of, for instance, hypothetical necessity claims as described in *Physics* II.9. In our previous example, if the saw or/and its form—the relevant *telos* and capacity for cutting or dividing (200a10-14: *to ergon*; b5-6: *to ergon tou priein hoti dihairesis toiadi*)—is to exist, then necessarily some

appropriate type (or range of types) of metallic material exists (as the saw's constituent matter). But, Aristotle contends, it is *because of* the saw's form, *telos*, and *ergon*, the capacity to cut or divide, that the necessary materials are as they are *but not conversely* (200a5-14; a24-27; a30-34; esp. a33-4: *aition gar touto tês hulês, all' ouch hautê tou telous*). An essentially matter-involving form can support this last "because," grounding claim. Hence, [TRUE GRIT] can show how necessity rests on the form and its own nature.

How could [PURISM] guarantee this necessity-grounding role of the form? It could hold that, while there is no mention of any *bona fide* material items in the form's definition, yet certain terms within this definition entail that the form, if it is to exist, must exist in matter, perhaps even the specific types of matter characteristic of compounds with that form. But how would this entailment work? What sort of terms would the form's definition contain such that they would imply the necessary presence of material features without themselves picking up any material items? Would [PURISM] need to posit an extra necessity claim of the type "it is necessary for the form's existence that some matter exist"? But if so, the "because" claim underwriting hypothetically necessary materials would seem unwarranted. For it would not be this "because" claim about form, *ergon*, and *telos* by itself, but the "because" claim *plus* the extra necessity claim which would carry through the grounding task.

It should not be thought, however, that [TRUE GRIT] encounters no difficulties. What is it for a natural form to be essentially matter-involving? Does this imply that a form turns out to be a material object with material parts? If so, what is the difference between the form and the compound, or between the form's matter and the compound's matter? It seems plausible to think that what is involved in a form are not token-materials or token-bodily parts (such as my muscles or bones), nor type-matters (such as eyes-with-perfect-eyesight). Rather, the form's content includes material ways of being, such as being handed or having bodily

bulk. The form *does not have* these items (like Socrates has hands or a body) but is, partly, these material items (see again the syllable example at Z.10, 1035a14-17).

The serious challenge for [TRUE GRIT] is how to specify the difference between the compound's matter and the material ways of being within the form. Is it merely the difference between *the massy* or *the heavy object* and *being massy* or *being heavy*? Perhaps this is less than satisfactory. At any rate, [TRUE GRIT] cannot identify material ways of being within the form with simply telic or functional material items. For this would make it collapse into [PURISM]. Nor can these ways of being be highly generic or abstract along the lines of being enmattered in something appropriate to embody this sort of form. Nor will it suffice to favour a disjunctive mode of being, comprising all the alternative material ways of realisation of a certain form. For this would undermine the unity of the form. Further work is necessary, at this juncture, to characterise more positively what the material ways of being internal to a natural form would be like.¹⁵

6. The Unity Constraint

The most helpful starting-point for discussing a form's unity is *Sophistici Elenchi* 31, where Aristotle takes up his pet example of snubness, an analogue for natural form. His argument strongly suggests that a form, and its intrinsic formal and material aspects, satisfy the primacy requirement (in the sense of *mê allo kat' allou* outlined in sections 3 and 4) and so possess heavy-duty unity. If so, they can ground the unity of the substance-kind compound.

That Aristotle is primarily interested in forms is clear from his clarification of the terms *to simon*, "the snub," and *to rhoikon*, "the bandy," at 182a3-6. There he insists that the snub and the bandy in this context should not be understood as compound objects, the snub-thing or the snub-nose, and the bandy-thing or the bandy-legged, but as affections (*pathê*).

That is, the correct logical form is *snubness* or *being snub*, and *bandiness* or *being bandy*—and these are precisely the counterparts to a natural form, an essential way of being such as *being a human*. The putative definitions of these two entities run as follows:

Snubness/being snub =_{def} being-nasally-concave/being-concavely-nasal.

Bandiness/being bandy =_{def} being-pedally-concave/being-concavely-pedal.

The point at 181b35-b3 seems to be that being concave, in isolation, is *only* an abstract—perhaps geometrical—feature that is true of both snubness and bandiness in a merely generic manner. By contrast, those items that constitute real, existing features, and so those that should be part of the explanatory *definiens* of snubness and bandiness are, respectively, nasal concavity (or equivalently: concave nasality) and pedal concavity (or equivalently: concave pedality). This implies the essential dependence of the formal aspects of snubness and bandiness on their respective material aspects. The converse direction of dependence, that of material on formal (or functional or telic) aspects, has been introduced at *Metaphysics* Z.11, 1036b29-32. There Aristotle holds that (for example) being handed should not be understood by itself, in a crudely or isolationist material fashion, but as being handed in a certain state or with the appropriate perceptive and wielding capacity. Material aspects within the form, then, are also essentially dependent on the formal aspects.¹⁶

If this is correct, Aristotle's thesis is one of essential interdependence, in the heavy-duty manner suggested in sections 3 and 4 (*mê allo kat' allou*). This heavy-duty unity underwrites the identity of a form with its own essence as it guarantees that nothing occurs in a form's essence which is artificially, extrinsically, or unstably added onto it. Hence, a form is a way of being for, and a unifier for, the compound and its material parts: for its heavy-duty unity does not leave any gaps that might render the compound vulnerable to challenges of heap-like or coincidental oneness.

There are several difficulties with the present proposal about the form's complexity and unity. First, one might object, if a form is complex in the way I suggested, doesn't it end up being made of elements? And if so, isn't it beset by the regress argument laid out in *Metaphysics* Z.17 and H.3? The reply to this question is negative: for the unity possessed by the form prevents its aspects from having any heap-like or coincidental structure. The formal and material items within the form are not parts, components, or elements but essentially interdependent ways of being. Aristotle seems to reject the conception of form as made up of (e.g.) the *genus* and the *differentia* understood as some type of material elements, the "matter of the form" (*Metaph.* Δ.24, 1023a35-b2; B.3, 998a20-b4). This rejection grows out of Plato's criticism of Socrates' Dream in the *Theaetetus*: a complex is not (or need not be) just a sum of its components; nor is its principle of unity another material element of it, or made of such material elements.

Second, it might be thought that, in the present view, the form turns out to be a compound (*suntheton*) of some sort, as opposed to a simple (*haploun*) as Aristotle seems to be conceiving of it. But this worry can be defused if we consider the claim made earlier that being simple is compatible with having some sort of complexity provided that the heavy-duty unity condition is met (in the sense of *mê allo kat' allou*).

A third question is about the example of snubness as used in the *Sophistici Elenchi* and elsewhere. This example seems to be less than promising as the unity between concavity and nasality is coincidental. There are concavities which are not nasal, just as there are noses which are not concave. It does not seem plausible to think that concavity is essentially dependent on nasality. There are two points in reply to this question. First, the snubness example is introduced as an analogue of natural form to illustrate Aristotle's view that a natural form, analogously to snubness, essentially involves material items in a manner similar to how nasality (or being nasally fleshy) is integral to snubness. Even if this understanding of

snubness is tied to a peculiarity of the Greek term “*simotês*,” it is still the case that Aristotle aims to understand natural forms on the basis of this analogy. Second, *Sophistici Elenchi* 31 uses the same example, thereby retaining the parallel to natural form, but makes an additional point. The items within a form’s essence are not independent conjuncts somehow put together and magically yielding a unity. Rather, they are essentially interdependent. In particular, this passage discusses the dependence of concavity on nasality. Even if the link in this specific case is artificial, the analogy-based claim about natural forms still stands.¹⁷ It would constitute a half-hearted hylomorphic view to claim that the form essentially involves formal and material aspects but maintain that its formal aspects are independent of its material aspects. For, if that were the case, then the form, its formal “side,” would after all be essentially immaterial. This would be another version of [PURISM].

Finally, why accept that a matter-involving form of this sort unifies natural substance-kind compounds and their material parts? To answer this question, it is important to emphasise that a form which itself includes essentially interdependent material and formal aspects does not leave any explanatory gap as to why a compound’s material parts are as they are, and why they are dependent on, and determined by, this compound’s essence or form. That they have their characteristic material nature is to be explained on the basis of the form, *exactly because* the form itself is essentially matter-involving, or better matter-form-involving or form-matter-involving. The compound’s material parts depend for their being on this form, and specifically on the form’s material aspects (but not conversely). There is no space, therefore, for raising the worry that they are somehow extrinsic to the compound or its essence, that they are put together like a heap, or that they are merely added onto the compound coincidentally. They are one with the compound’s essence and they constitute a unity—the unity of the substance-kind compound—because their nature is determined on the

basis of (or is “tied with”) the compound’s essence, the form and its material-cum-formal aspects (but the converse is not true).¹⁸

How, if at all, could [PURISM] achieve the heavy-duty unity required to ground the compound’s unity? If a natural form is essentially pure and matter-less, it seems that any presence of matter in the substance-kind compound will be a sort of addition, an accretion of material items onto a compound-type that is essentially immaterial: for its essence, the form, is itself immaterial. In effect, the putative ground for the unity of the compound-type with its material parts will be a conglomerate consisting of the definition of pure form *plus* a necessary enmatterment claim or a hypothetical necessity claim. In [PURISM] a form would not perhaps be as shakily one as the *Iliad* but it would still fall short of the heavy-duty unity requirement (*mê allo kat’ allou*). For an essentially non-matter-involving form would always stand in need of an *addition* in order to introduce matter. This would give rise to an explanatory gap in respect of the unity constraint not only about the form but also (because of this) about the compound.

The conclusion seems to be that [TRUE GRIT] fares better than [PURISM]. An essentially matter-involving form satisfies the conditions of causal-explanatory priority and of unity far more straightforwardly, solidly, and economically than a purely immaterial form does.

Endnotes

¹ This paper was presented at the Conference on Aristotle’s *Metaphysics*, Ancient and Modern, in honour of David Charles, on the occasion of his retirement, organised by the University of Oxford in 2014. I am grateful to David Charles and the other participants for their helpful questions, objections, and suggestions.

² See M. Frede & G. Patzig, eds., *Aristoteles 'Metaphysik Z'*, 2 vols. (Munich: Verlag C. H. Beck, 1988); M. Frede, "The Definition of Sensible Substances in *Met. Z*" in *Biologie, Logique et Metaphysique chez Aristote*, eds. D. Devereux & P. Pellegrin (Paris: Editions du Centre National de la Recherche Scientifique, 1990), 113-29; M. V. Wedin, *Aristotle's Theory of Substance: The Categories and Metaphysics Zeta* (Oxford: OUP, 2000); D. Devereux, "Aristotle on the Form and Definition of a Human Being: Definitions and their Parts in *Metaphysics Z.10 & 11*," in *Proceedings of the Boston Area Colloquium in Ancient Philosophy*, 26 (2011): 167-96; for a reply to Devereux see A. Code, "Commentary on Devereux," in *Proceedings of the Boston Area Colloquium in Ancient Philosophy*, 26 (2011): 197-209.

³ Modern Aristotelian functionalists include Mary Louise Gill ("Unity of Definition in *Metaphysics H.6 and Z.12*" in *Being, Nature, and Life in Aristotle: Essays in Honor of Allan Gotthelf*, ed. J. G. Lennox & R. Bolton (Cambridge: CUP, 2010), 97-121; "Aristotle's Attack on Universals," *Oxford Studies in Ancient Philosophy* 19 (2001): 235-60; "Matter against Substance", *Synthese* 96 (3) (1993): 379-97; *Aristotle on Substance: The Paradox of Unity* (Princeton: Princeton University Press, 1989), and (arguably) James Lennox (" 'As if We Were Investigating Snubness': Aristotle on the Prospects for a Single Science of Nature," *Oxford Studies in Ancient Philosophy*, 35 (2008): 149-86). These thinkers, however, seem to subscribe to the [COMPOUND FIRST] view, my (2), as they take the compound as fundamental. Scaltsas's substantial holism seems to be a further sort of [COMPOUND FIRST] theory as it takes the substantial form in actuality to be identical with the compound substance itself, whereas the form is distinct from the compound substance only by some sort of abstraction (T. Scaltsas, *Substances and Universals in Aristotle's Metaphysics* (Ithaca & London: Cornell University Press, 1994)). Only Jennifer Whiting, by contrast, despite following roughly the functionalist line, and emphasising the distinction between

functional/proximate and remote matter, takes the form as primary, and as the source of the compound's being and unity (see her "Living Bodies" in *Essays on Aristotle's De Anima*, ed. M. Nussbaum & A. O. Rorty (OUP: Oxford, 1992), 75-92; "Metasubstance: Critical Notice of Frede-Patzig and Furth," *The Philosophical Review*, 100(4) (1991): 607-39; "Form and Individuation in Aristotle," *History of Philosophy Quarterly*, 3(4) (1986): 359-77).

⁴ See P. Corkum, "Critical Notice for Michail Peramatzis' *Priority in Aristotle's Metaphysics*, OUP, 2011," *Canadian Journal of Philosophy*, 43(1) (2013): 136-56.

⁵ For a series of arguments in favour of this interpretation of the primacy or *mê allo kat' allou* requirement, see M. Peramatzis, "Essence and *per se* Predication in Aristotle's *Metaphysics* Z.4," *Oxford Studies in Ancient Philosophy* XXXIX (2010): 121-82 (esp. 143-65).

⁶ The use of the term "component" within inverted commas is significant. I shall argue that the items involved in a form cannot be its parts, constituents, components, or elements in any strong or substantive sense.

⁷ For an identity thesis which bears strong similarities to the view outlined at present see C. B. Martin and J. Heil, "The Ontological Turn," *Midwest Studies in Philosophy*, 23(1), (1999): 34-60; and J. Heil, "Properties and Powers," *Oxford Studies in Metaphysics*, 1 (2004): 223-54. They identify properties with dispositions (which seem analogous to formal, functional, or telic items) and dispositions with (categorical) qualities (which seem analogous to material items). I am not sure that my view needs to make an analogous extra move and identify the formal and material items within a form's essence. After all, there is an important conceptual or theoretical distinction between formal and material aspects; perhaps each plays a distinctive role in scientific explanation; or each (partly) grounds very different features of the compound.

⁸ See K. Koslicki, "Aristotle's Mereology and the Status of Form," *Journal of Philosophy*, 103(12), Special Issue: Parts & Wholes (2006): 715-36.

⁹ This is effectively part of Johnston's criticism of Koslicki's view; see his "Hylomorphism," *Journal of Philosophy*, 103(12), Special Issue: Parts & Wholes (2006): 652-98.

¹⁰ There is no need for the present proposal to conceive essences or forms strictly as particular or individual ways of being, as Martin and Heil suggest in their account of properties (but nothing in my view rules out there being particular or individual ways of being). Nor is it necessary to identify, as Lowe does, a particular object or compound with its form. Indeed, this is an identity that my view explicitly and strongly denies in order to respect Aristotle's own non-identities introduced earlier. See E. J. Lowe, "Neo-Aristotelian Metaphysics: A Brief Exposition and Defence" in *Aristotle on Method and Metaphysics*, ed. E. Feser, (Basingstoke: Palgrave Macmillan: 2013), 196-205; "A Neo-Aristotelian Substance Ontology: neither Relational nor Constituent" in *Contemporary Aristotelian Metaphysics*, ed. T. Tahko T. (Cambridge: CUP, 2012), 229-48; "Asymmetrical Dependence in Individuation" in *Metaphysical Grounding: Understanding the Structure of Reality*, ed. F. Correia & B. Schnieder (Cambridge: CUP, 2012); "Form without Matter" in *Form and Matter: Themes in Contemporary Metaphysics*, ed. D. S. Oderberg, (Oxford: Blackwell, 1999), 1-21.

¹¹ My remarks, (i)—(v), may be seen as a development of a similar comparison between Aristotle and Frege made by M. J. Loux, *Primary Ousia: An Essay on Aristotle's Metaphysics Z and H* (Ithaca & London: Cornell University Press, 1991), 132-5.

¹² For further discussion of these points see M. Peramatzis, "Matter in Scientific Definitions in Aristotle" in *Oxford Handbooks Online*, (New York, Oxford University Press 2013-4).

¹³ Admittedly this is a controversial reading of this problematic part of the text but let us explore it.

¹⁴ It is important to ask whether Aristotle himself clearly conceives of natural form as essentially matter-involving. This exegetical question is too difficult to settle within the confines of the present essay. The key texts are extremely controversial and cannot constitute

compelling proof for either [TRUE GRIT] or [PURISM]. For a detailed discussion, see M. Peramatzis, *Priority in Aristotle's Metaphysics* (Oxford: OUP, 2011), chapters 3-6.

¹⁵ For some further, if still incomplete, discussion, see M. Peramatzis, *Priority in Aristotle's Metaphysics*, ch. 7, esp. 188-95.

¹⁶ For a fuller argument, see M. Peramatzis, *Priority in Aristotle's Metaphysics*, chapter 5, esp. 91-99.

¹⁷ For an argument in support of the bold claim that the dependence of concavity or being concave upon being nasal or being nasally fleshy is not artificial, see M. Peramatzis, *Priority in Aristotle's Metaphysics* (Oxford: OUP, 2011), 122-32 (esp. 129-32).

¹⁸ This argument ranges over substance-*kind* compounds and *their* material parts (such as the bones, flesh, etc. thus-and-so arranged, mentioned in the human-kind's definition offered earlier). It does not apply to *particular* compounds or *their* non-essential, "here-today-gone-tomorrow," token bodily constituents.