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Aristotle's "Logical" Level of Metaphysical Investigation

1. Introduction

It is a remarkably difficult task even to offer a widely acceptable translation of the term λογικῶς as used by Aristotle in *Metaphysics* Z and elsewhere. In translating one of its most significant occurrences, at *Metaphysics* Z4, 1029b13, Ross, for example, renders it as "in the abstract,"¹ while Bostock opts for the quasi-transliteration "logical."² More recently, Kei Chiba has suggested the phrases "to speak formally" or "to use the method of formal argument."³ I

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- 1 W.D. Ross, *Aristotle: Metaphysics* (Oxford, 1924), 2: 166.
- 2 David Bostock, *Aristotle: Metaphysics, Books Z and H* (Oxford, 1994), 4; 86.
- 3 Kei Chiba, "Aristotle on Essence and Defining-Phrase in his Dialectic" in *Definition in Greek Philosophy*, ed. David Charles (Oxford, 2010), 204; 209. Like Ross's translation "in the abstract," Chiba's "formally" has the advantage of being successfully applicable to a variety of contexts within Aristotle's works. For instance, if we suppose that the discussion of *Nicomachean Ethics* 7.3 up to the introduction of the "physical" account (φυσικῶς) at 1147a24 is framed at a λογικῶς level, the rendering "abstract" or, perhaps even better, "formal" seems successful. For this "logical" section is indeed dominated by abstract or formal distinctions between different senses or ways of knowledge (knowledge possessed or actually used), as well as different modes of propositions known (universal or particular). The idea of an abstract or formal level of study, then, seems to apply well across the board not only in metaphysical and dialectical contexts (such as those we find in the *Metaphysics* or the *Topics* respectively) but also in an ethical context such as the discussion of *akrasia* in *EN* 7.3. Chiba, however, makes an additional move, which I find less than clear: he connects the "formal" type of study with what he calls the "theory of dialectic." As he puts it, "Aristotle, in developing this as a theory, was intending to advance a general account of (e.g.) being and identity in a

shall use the mechanical rendering “logical” to avoid any terms which might suggest that I adopt a comprehensive interpretation of this type of Aristotelian investigation. The reason for this cautious strategy is that the Aristotelian notion of a logical inquiry is less than perspicuous. While I shall not, at present, offer a proper account of this notion, I shall seek to outline some of its implications in the context of *Metaphysics* Z4 and at other crucial junctures of *Metaphysics* Z.

The most plausible available interpretations of this concept run as follows:

(1) As noted, Ross maintains that an investigation is logical in that it is carried out “in the abstract” or is based on linguistic considerations.⁴ Thus, he argues that the logical explorations of *Metaphysics* Z4 come to an end at 1030a27, where Aristotle urges that “we should also examine *how to speak* about each thing, but not more than [examining] *how each thing is*.” We could agree with Ross that a logical investigation is, in some measure, grounded on linguistic considerations. However, this view is far from compelling. First, it is obvious that Aristotle does not discuss the notion of essence exclusively in terms of linguistic theses. As Burnyeat remarks, the contrast between logical and non-logical is “quite independent of the contrast between linguistic and non-linguistic considerations.”⁵ This last contrast can be found in both logical and non-logical investigations, as Aristotle’s scientific (non-logical) treatises sometimes argue from linguistic premises.⁶ Moreover, Ross’s remark that this type of inquiry stops at 1030a27 seems to conflict with Aristotle’s practice not just in the remainder of *Metaphysics* Z4, but also in Z5 or even Z6. For these chapters too (or Z5 at least) seem to argue from premises rather similar to those deployed in *Metaphysics* Z4.

(2) On the basis of the etymological connection between λόγος (in the sense of “account” or “definition”) and λογικῶς, it might be argued that Aristotle’s aim in *Metaphysics* Z4 is to define the notion of essence. This might entail that the logical investigation extends up to 1029b22, where Aristotle concludes his

‘formal manner’ (*logikos*), not to derive first principles from merely *endoxic* premisses or practices” (“Aristotle on Essence,” 210; Chiba’s emphasis). He contrasts dialectical theory with dialectical practice, “which is confined to examining a proposition by offering *pro* and *contra* arguments based on premisses of this [i.e. endoxic] type” (ibid., 210). It is unclear what, in his view, the basic characteristic of a “formal method of argument” consists in: are we to single out as most important the lack of endoxic premisses, the non-adversarial mode of argument (one which does not involve *pro* or *contra* considerations), or the idea of seeking to offer a general account?

4 Ross, *Metaphysics*, 2: 166; 168.

5 See Myles Burnyeat, *A Map of Metaphysics Z* (Pittsburgh, 2001), 23.

6 Obviously, this objection to Ross’s view is decisive only on the assumption that Aristotelian “scientific” works are instances of non-logical investigations.

account of essence in terms of a certain type of *per se* predication and turns to the extensional questions of *what things have essences* and *what things qualify as essences*.⁷ These last two questions, however, are not completely independent of each other, even if conceptually distinct. Further, in my view, both of these questions are addressed in parallel to shed more light on the notion of essence itself. On the basis of these questions Aristotle can continue to tackle the intensional issue of what the concept of essence consists in.⁸ If this is correct, his account of essence continues (perhaps indirectly) after 1029b22.

(3) One of the most attractive views would be that the logical inquiry that begins in *Metaphysics* Z4 involves premises which are different from the principles of the relevant scientific discipline (first philosophy or metaphysics). Equally, it uses considerations which are more general or abstract than are the principles peculiar to this science. Myles Burnyeat has argued for this type of view. He suggests that the logical investigation does not invoke partisan ontological theses or distinctions such as those between matter and form or potential and actual being, nor does it lay down in advance the principles which account for the change or the being of things.⁹ In this view, the logical type of inquiry dominates the overall discussion of *Metaphysics* Z4–6.

7 See M.J. Woods, "Substance and Essence in Aristotle," *Proceedings of the Aristotelian Society* 75 (1974–1975): 170–171. For an overview of the different interpretations of λογικῶς, see Bostock, *Z and H*, 86.

8 I argue for this claim in "Essence and *per se* Predication in Aristotle's *Metaphysics* Z.4," *Oxford Studies in Ancient Philosophy* 39 (2010): 135–137.

9 Burnyeat, *Map*, 19–24; 87–125. To make this view more precise, one would have to explain the difference between the λογικῶς, ἀναλυτικῶς, and φυσικῶς types of inquiry. The first question would be whether these are three separate types of inquiry or not. It may be claimed, for example, that the analytical level is a type of logical or physical investigation. It is more plausible, however, to think that Aristotle takes these three levels as distinct from but not subordinate to each other. It seems incontrovertible that, while the physical type of inquiry invokes causal and explanatory considerations, or distinctions such as those between matter and form or potential and actual being, the logical level is free of such material. It is less than clear, however, what the distinctive features of the analytical level are. A tentative proposal might be given with the help of *Posterior Analytics* 1.22, 84a7–b2; and 1.32, 88a18–b8. While logical inquiries use as premises general claims about predication, for example, or theses from the theory of syllogism, the analytical level introduces theoretically charged considerations about demonstration or about explanatory order. Hence, for instance, in *APo.* 1.22, the logical discussion of 82b35–83a33 is based on the contrast between accidental and *per se* predication, whereas the analytical approach at 84a7ff. involves demonstrative and epistemological concerns about (*inter alia*) the impossibility of infinite demonstrative regress. I shall not examine the analytical level of inquiry in any further detail as it lies outside the scope of present concerns.

It should be emphasized that my present aim is not to defend or attack any of these three views. My line of argument, though, is consistent with and perhaps corroborates (3). Further, it could make (3) more precise, even if it does not attempt to set out in general what a logical investigation consists in. This last project might be hopelessly demanding or even doomed to failure, especially if we agree with Burnyeat that the sense of λογικῶς is irreducibly relative or tied to the context in which it is embedded.¹⁰ For, if this is correct, a logical investigation would take on different, even conflicting, forms depending on the context or the type of treatise in which it is conducted.

While my view is congenial to (3), it exercises some degree of caution regarding the role of partisanship in Burnyeat's construal.¹¹ It may well be that as a matter of fact, for the most part or even always, logical discussions are non-partisan. But being non-partisan just does not seem to be the core of the concept of a logical investigation within *Metaphysics* Z. If we examine *Metaphysics* Z4, for instance, it looks as if there is a specific, *predicational* sort of material that is employed at the logical level: Aristotle is drawing on considerations about what is (truly) said of what, and in what way. The chief aim of the present essay will be to clarify and support this predicational reading of the logical level of metaphysical inquiry.

Moreover, even if logical inquiries are (always or for the most part) non-partisan, there are significantly different ways of being non-partisan. For instance, a philosophical investigation may be non-partisan in that it is based on merely linguistic considerations that are understood and accepted by all competent speakers within a given language community. Or an argument may be non-partisan in that it does not involve any commitments to any particular ontological views. It is not obvious that Aristotle's own non-partisan logical discussions could be described in either of these ways. For example, while *Metaphysics* Z4 is logical and (in some sense) non-partisan, it includes claims and arguments that would not be accepted by theorists across the board. It is doubtful whether any and every theorist would subscribe to (for example) the Aristotelian theory of categories assumed in *Metaphysics* Z4 (1029b22–25; 1030a18–20; b10–12). Similarly, it is hard to see how a Heraclitean flux theorist (for example), or a modern state-of-affairs theorist could accept Aristotle's claim in this chapter that substances have metaphysical primacy in that they have essences and definitions in a central or unqualified manner (1030a29–32; b4–6).¹² Aristotle's logical

¹⁰ Cf. Burnyeat, *Map*, 21.

¹¹ For Burnyeat's view that a λογικῶς inquiry is non-partisan or neutral, see his *Map*, 104; 124–125.

¹² Here I am assuming that these passages remain at the “logical” level of discussion. Indeed, in my view, the whole of *Metaphysics* Z4–6 is “logical” in this sense.

inquiries, then, should be conceived as partisan in a distinctive way. It may well be that the notion of predication introduced in the previous paragraph could be helpful in setting out the relevant concept of partisanship.¹³

It will not be part of my argument to answer the wide question of what λογικῶς means quite generally. Rather, my interpretation will be confined to the discussions in *Metaphysics Z* (starting with Z4) and to related theoretical treatises such as the *Posterior Analytics* and the *Topics*. Even within these contexts, however, I shall not seek to lay out the content of the notion of a logical inquiry as such. Rather, my aim is to specify (what I take to be) the salient features of a particular type of case, the metaphysical "logical" inquiry carried out in *Metaphysics Z*. This is not the same as characterizing the sense of λογικῶς quite generally or even offering its meaning within the limited context of this book. Rather, my strategy will be to describe the evidential grounds Aristotle uses in the logical sections of his metaphysical inquiries. These grounds consist of what I called "predicational" notions, considerations, premises, and arguments which support his logical theses and conclusions. While the results of my discussion could contribute to the overall understanding of the content of λογικῶς, they are not the whole story. They might not even constitute the most important (or even an important) part of this story. They could, however, be used as starting points on which to build in order to arrive at a general account of λογικῶς.¹⁴

2. The Predicational Reading in *Metaphysics Z4*: Initial Characterization and Evidence

Metaphysics Z4 underpins its logical theses about essence and definition on the basis of premises about what is (truly) predicated of what, and in what way.¹⁵

- 13 The present essay will not discuss this issue directly, though some of the points made in section 7 are indirectly related to it.
- 14 That Aristotle's theoretical works, such as the *Metaphysics* and the *Posterior Analytics*, are the best starting points for understanding the notion of a logical inquiry becomes clear once we consider the fact that out of the thirteen occurrences of the term λογικῶς in the *corpus* eight of them are found in the *Metaphysics* and the *Posterior Analytics* (I am indebted to Börje Bydén for drawing my attention to this significant fact).
- 15 While Aristotle is aware of, and frequently brings out, the distinction between linguistic items and types of entity, his logical discussions are based on predicational considerations which could apply equally well either to terms within statements involving predicational links, or to types of entity which are said of other types of entity. In what follows I shall normally be using the phrase "what is said/predicated of what" without marking out this important distinction.

For in this chapter the notion of essence is set out in terms of a certain type of *per se* predication which obtains between (types of) objects and their essences. It is these parameters, then, which I take as crucial in constituting this chapter's logical nature.¹⁶

It should be emphasized that these parameters are not an idiosyncrasy of *Metaphysics* Z4 alone. Rather, they are conspicuous in several related logical inquiries outside this chapter. *Metaphysics* Z1 is particularly important in this respect as it seems to be introducing the predication mode of metaphysical study. Hence, at 1028a25–29, Aristotle emphatically claims that his position that substances are prior to non-substance attributes (e.g., being white) and accidental compounds (e.g., what is white or the white thing) is reached on the basis of predication material (1028a27–28: ὅπερ ἐμφαίνεται ἐν τῇ κατηγορίᾳ τῇ τοιαύτῃ). In considering predications such as “Socrates is white” we see clearly that some particular substance or other is the determinate subject which underlies entities such as being white or what is white (1028a25–27).

Later, too, in the course of *Metaphysics* Z, Aristotle's references to the logical level of inquiry are coupled with important predication points. Thus, in *Metaphysics* Z17 he insists on the claim that the items which are to be explained in terms of substance should be articulated as cases in which something holds of something else in a predication fashion (1041a23: τὶ ἄρα κατὰ τινος ζητεῖ διὰ τί ὑπάρχει; 25–26: ἄλλο γὰρ οὕτω κατ' ἄλλου ἐστὶ τὸ ζητούμενον). It is predication structures of this sort that are to be explained by the cause with

16 In favouring this predication reading of λογικῶς I am in good company. In his commentary Thomas Aquinas construes Aristotle's λογικῶς claims as “dialectical comments about the essence of a thing.” He holds that this “dialectical” examination inquires into “what essence is from the manner of *predicating terms of a subject*” (*In duodecim libros Metaphysicorum Aristotelis expositio* 7 lec. 3 n. 3 (transl. John P. Rowan, *Commentary on the Metaphysics of Aristotle* [Chicago, 1961], 2: 61; my emphasis). Aquinas does not, however, develop this attractive suggestion in any further detail, and, at any rate, he adopts the view that the whole of *Metaphysics* Z is “logical,” a claim which is less than cogent. Most notably amongst the ancient commentators, Asclepius offers two alternative construals. The λογικῶς discussion is (a) imprecise (οὐκ ἀκριβῶς): for, while Aristotle's considered thesis is that only substances have definitions, he goes on to argue that accidents too have definitions. Or (b) his discussion is λογικῶς in that he proceeds from what is posterior – the definition (ὁρισμός) – to what is prior – the form (τὸ εἶδος); for it is necessary first to have *x*'s form in order to have *x*'s definitional account. See Asclepius, *In Aristotelis Metaphysicorum Libros A–Z Commentaria*, ed. Michael Hayduck, CAG 6.2 (Berlin, 1888), 383.13–20. Here I am indebted to Sten Ebbesen for drawing my attention to Aquinas's brief comment on λογικῶς.

which the logical notion of essence is identified (1041a27–28: φανερόν τοίνυν ὅτι ζητεῖ τὸ αἴτιον· τοῦτο δ' ἐστὶ τὸ τί ἦν εἶναι, ὡς εἰπεῖν λογικῶς). I shall return to these points in section 5.

Even outside *Metaphysics* Z, in treatises such as the *Posterior Analytics* and the *Topics*, the predication reading seems to make good sense of Aristotle's logical discussions. In *Posterior Analytics* 1.22, for example, Aristotle seeks to show that the attributes that demonstrative sciences prove of their subject matters are not indefinitely many. The logical section of this argument is based on the contrast between accidental and *per se* predication (82b35–83a32). I shall discuss parts of this logical argument, as well as its parallels in *Posterior Analytics* 1.4, in section 3. Further, in section 4, I shall seek to link *Topics* 1.9 with the logical investigation of *Metaphysics* Z4–5 understood with the help of predication material.

Before going into the details of the predication view, however, it is important to draw attention to a structural point about *Metaphysics* Z as a whole. *Metaphysics* Z3 introduces the four ways “in which substance is spoken of,” and shapes most (if not all) of the discussion in the rest of the book. Alongside the concept of subjecthood, which is discussed and criticized in *Metaphysics* Z3 itself, Aristotle also lists the notions of essence, universal, and genus (1028b34–36). In taking up the topic of essence (τὸ τί ἦν εἶναι), *Metaphysics* Z4 specifies at the very outset that this chapter's inquiry is set at the λογικῶς level:

Since at the beginning we distinguished in how many ways we define substance, and one of these appeared to be the what-it-is-to-be [τὸ τί ἦν εἶναι], we must now investigate this. And first let us make some logical remarks about it [πρῶτον εἰπώμεν ἓν ἅπερ αὐτοῦ λογικῶς] (1029b1–2; 13; Bostock's trans. with minor changes).

Let me briefly present the textual evidence for the predication reading of the logical level of metaphysical study within this chapter:

1029b14 ὁ λέγεται καθ' αὐτό: an attribute being *F* is *x*'s essence just in case being *F* is predicated in the relevant *per se* way of *x*.

1029b23–24 ἔστι γάρ τι ὑποκείμενον ἐκάστω: in cases of compounds there is a subject, *x*, referred to by a subject term, which underlies each attribute, being *F*, described by the predicate term. This claim does not describe the notion of essence itself but is characteristic of a logical discussion: for a compound is understood simply on the basis of the subject-plus-predicate or object-plus-attribute structures. There is no mention, by contrast, of the alternative, hylomorphic account of compounds.

1029b29 (more generally, see 1029b29–1030a2) τῶν καθ' αὐτὸ λεγομένων: if certain attributes (such as being *F*, being *G*, etc.) of compounds are their essences, they are predicated of them in the relevant *per se* way.

1030a3–4 ὅταν δ' ἄλλο κατ' ἄλλου λέγεται: being *F* and being *G* are said of each other but differ in nature. In the next section I shall label this the “non-primary” way of predication, which fails to capture the notion of essence: for an essential connection between being *F* and being *G* is one in which the two items are non-different in nature.

At 1030a10–11, by contrast, we find ὅσα λέγεται μὴ τῷ ἄλλο κατ' ἄλλου λέγεσθαι: being *F* and being *G* are said of each other but do not differ in nature. This is what I shall call the “primary” way of predication, which is, in my view, Aristotle's basic conceptual tool in *Metaphysics* Z4 for demarcating the mode of *per se* predication appropriate to characterizing the notion of essence. I shall take up this central point in the next section.

1030a13–14 οὐ κατὰ μετοχὴν λέγεσθαι καὶ πάθος οὐδ' ὡς συμβεβηκός: being *F*, insofar as it is primary, is not said of *x* by participation or as its affection, nor in the accidental (or non-primary) way.

1030b8–12 τοῦτο δὲ ἐὰν ἐνὸς ᾗ, μὴ τῷ συνεχεῖ ὥσπερ ἡ Ἰλιὰς ἢ ὅσα συνδέσμων, ἀλλ' ἐὰν ὁσαυχὼς λέγεται τὸ ἓν: τὸ δ' ἐν λέγεται ὥσπερ τὸ ὄν: τὸ δὲ ὄν τὸ μὲν τόδε τι τὸ δὲ ποσὸν τὸ δὲ ποιόν τι σημαίνει: the type of unity which is crucial in separating definitional from non-definitional accounts is predicational or categorial unity. An account is unified in this way just in case it assigns *one predicate to one subject in one of the ways of the distinct categories*.

It seems fair to conclude from these points that the fundamental considerations of *Metaphysics* Z4, which consolidate its λογικῶς conclusions, are about types or modes of predicational connection between certain kinds of subject terms and predicate terms, or between certain types of object and attribute. It is precisely this sort of logical framework which I call “predicational.”¹⁷

17 It may be objected that the second occurrence of λογικῶς at *Metaph.* Z4, 1030a25–26, does not conform to this predicational model. There Aristotle aims to establish the position that substances have essence and definition in the primary way, whereas non-substances have essence and definition in a derivative or secondary way. To clarify this position, he compares the case of non-substances with that of non-being: just as non-being is said to be in a reduced or attenuated way, similarly non-substances have essence and definition in a secondary or derivative way. Significantly, the way in which non-being can be said to be is λογικῶς. But, the objector would claim, this argument does not seem to offer any predicational considerations which support the thesis that non-being (in a way) is. There are two ways in which to defuse this objection. The first

3. Primacy in *Metaphysics* Z4 and the *Posterior Analytics*: The Predicational Approach to Essence

Aristotle's strategy in *Metaphysics* Z4 consists in characterizing the notion of essence by reference to a specific type of *per se* predication. In the first part of the chapter (1029b14–1030a2) he discusses and discards those sorts of *per se* predication which are not appropriate to capture the notion of essence. He then goes on to describe what I referred to in section 2 as the "primacy condition." It is important to show that this condition instantiates the predicational concerns in terms of which I set out the logical level of inquiry. Here are his remarks about primacy:

would be to hold that λογικῶς at 1030a25–26 makes a merely verbal point, which is disconnected from the more substantive, predicational λογικῶς claims made in the rest of *Metaphysics* Z4. For Aristotle seems to be deriving his metaphysical position about primary and secondary ways of having essence and definition from the ways in which the term "to be" is said. Thus, his position is alluded to at 1030a17–18, and then explained at a18–20 (see the γὰρ at a18) on the basis of how the what-it-is (τὸ τί ἔστιν) "signifies" any and every category. This point is further explained at 1030a21–23 (see the γὰρ at a21) by reference to the different ways in which the term "is" or "to be" (τὸ ἔστιν) belongs to any and every category. The basic idea, then, is the verbal point that the term "is" or "to be" is linked to all kinds of being: to some it applies primarily, to others secondarily. The comparison with non-being stresses a similar verbal point: non-being too is said to be, "speaking in a verbal or formal manner." If this is correct, λογικῶς here has these verbal or formal implications but does not carry the more important predicational connotations of λογικῶς as used in the rest of *Metaphysics* Z4. This is exactly why at 1030a27–28 Aristotle urges us to be more cautious about how things are rather than how we ought to speak about them. While the claims about "is" or "to be" are merely verbal – just as the comparison with non-being is – the predicational material and the positions about essence and definition stemming from it relate more closely to how things are, and so are more crucial. The alternative (and perhaps preferable) reply to the present objection would be to introduce material from outside *Metaphysics* Z4. At *Metaphysics* Δ7, 1017a18–19, in a context where Aristotle sets out the notion of accidental being, he notes that even not-white is said to be: for there is a subject, e.g., a human, to which being not-white belongs. Because a human is, and being not-white belongs to him/her, not-white too (in a way) is. Clearly, Aristotle here relies on the predication "A/This human is not-white" to explain the way in which not-white is a being. We could claim then that in *Metaphysics* Z4 he makes a similar point: on the basis of the predication "x is not-F," he draws the logical result that a non-being, such as being not-F, in a way is. If so, the point about non-being is also based on predication, just as the rest of the logical theses put forward in *Metaphysics* Z4 are. (In formulating the examples taken from *Metaphysics* Δ7 and Z4 I am omitting some important nuances about the position and scope of the negation.)

But is what it is to be a cloak a what-it-is-to-be at all or not? [Presumably not] for the what-it-is-to-be-something is precisely the type of thing that something is [ὅπερ γὰρ τί ἐστι τὸ τί ἦν εἶναι]; but when a thing is said of something other than itself, it is not precisely a certain type of thing [ὅταν δ' ἄλλο κατ' ἄλλου λέγεται, οὐκ ἔστιν ὅπερ τόδε τι], as, e.g., the white man is not precisely a certain type of thing [ὁ λευκὸς ἄνθρωπος οὐκ ἔστιν ὅπερ τόδε τι], if indeed being a certain type of thing belongs only to substances [εἴπερ τὸ τόδε ταῖς οὐσίαις ὑπάρχει μόνον]; hence, the what-it-is-to-be belongs to those things whose account is a definition. And an account is not a definition if a name signifies the same thing as the account ... but if it is of some primary thing [ὁρισμὸς δ' ἔστιν οὐκ ἂν ὄνομα λόγῳ ταὐτὸ σημαίνει ... ἀλλ' ἐὰν πρώτου τινὸς ἦ]; and such are the things which are said not by being predicated of anything other than themselves [τοιαῦτα δ' ἔστιν ὅσα λέγεται μὴ τῷ ἄλλο κατ' ἄλλου λέγεσθαι]. Hence, the what-it-is-to-be will not belong to things which are not species of a genus but to species of a genus alone (for these seem not to be said by participation or as affections, nor accidentally) [οὐκ ἔσται ἄρα οὐδενὶ τῶν μὴ γένους εἰδῶν ὑπάρχον τὸ τί ἦν εἶναι, ἀλλὰ τούτοις μόνον (ταῦτα γὰρ δοκεῖ οὐ κατὰ μετοχὴν λέγεσθαι καὶ πάθος οὐδ' ὥς συμβεβηκός)] (*Metaph.* Z4, 1030a2–14; Bostock's trans. modified).

It is of utmost importance, first, to resist the widely held assumption that primacy denies predication structure to objects that have essences or even to their essences. Second, we should be able to identify the way in which primacy is related to *per se* predication. For if *Metaphysics* Z4 sets out the notion of essence in terms of a certain type of *per se* predication, and if primacy is the cornerstone of this chapter's account, primacy too should be organically linked to *per se* predication of the relevant sort.

To carry through the first task, it should be noted that commentators such as Ross or Bostock seem mistaken in taking the phrase μὴ τῷ ἄλλο κατ' ἄλλου λέγεσθαι used at 1030a10–11 as altogether denying predication structure to essence-possessors.¹⁸ For, clearly, this phrase does not imply that primaries or essence-possessors should be parts of no type of predication at all. Nor does it require that the being of essence-possessors should not presuppose or entail any predication at all. To convey this idea of simplicity or complete lack of predication structure, Aristotle would normally invoke the condition of

18 See Ross, *Aristotle: Metaphysics*, 2: 167; 170; Bostock, *Aristotle: Metaphysics Z & H*, 91.

ultimate subjecthood. Thus, in *Metaphysics* Z3, he claims that a subject is that which other items are said of but is not itself said of anything else *at all* (1028b36–37: τὸ δ' ὑποκείμενον ἐστὶ καθ' οὗ τὰ ἄλλα λέγονται, ἐκεῖνο δὲ αὐτὸ μηκέτι κατ' ἄλλου, where μηκέτι κατ' ἄλλου expresses the idea of complete lack of predication structure; cf. 1029a8–9: τὸ μὴ καθ' ὑποκειμένου ἄλλα καθ' οὗ τὰ ἄλλα).

In my view, by contrast, the phrase μὴ τῷ ἄλλο κατ' ἄλλου λέγεσθαι prevents primaries from being parts *only* of a certain type of predication: the one where the predication *relata* are different in nature from each other. Predication structure is admissible, then, even in the case of primaries: for they can be parts of, and their being can imply, certain sorts of predication, provided that the items which are predicationally interrelated are not different in nature from each other. In this interpretation, the most significant part of the primacy condition is the relation of non-difference in nature between two items which are predicationally connected.

The main source of evidence within *Metaphysics* Z4 for taking the qualification ἄλλο κατ' ἄλλου in this way, as opposed to Ross's or Bostock's deflationary construal "one of another," can be derived from 1030a13–14. There, the kind of predication which does not connect items that are ἄλλο κατ' ἄλλου is contrasted with *accidental* predication (ὡς συμβεβηκός) or (using a Platonist vocabulary) with being said *by participation* or *as an affection* (κατὰ μετοχὴν καὶ πάθος). The idea, then, is not that primaries or essence-possessors involve no predication structure at all. Rather, they do not involve any accidental predication structure. If so, the primary mode of predication is non-accidental or essential. Thus, for example, while "a/this human is walking" is an accidental, non-primary predication, "a/this human is a rational being of a certain kind" or "a/this human is an animal of a certain kind" are the appropriate non-accidental, primary modes of predication.¹⁹

In discussing primacy in this sense Aristotle makes two important additional claims. He notes that essence, what it is to be *F*, is "precisely the type of thing that something is" or "precisely the certain type of thing that something is" (1030a3: ὅπερ γὰρ τί ἐστὶ τὸ τί ἦν εἶναι). At the same time, though, he claims that essence-possessors too, the (kinds of) entities that have essences, are "precisely certain kinds of thing" (1030a4–6: while the *definiendum* ὁ λευκός ἀνθρώπου is not a ὅπερ τότε τι, substances – the only or paradigmatic essence-

19 I argue in detail for this interpretation of primacy in "Essence and *per se* Predication," 143–157.

possessors – are $\tau\acute{o}\delta\epsilon$ and presumably $\acute{o}\pi\epsilon\alpha\tau\iota$). This is not surprising: for a type of object and its essence are related in an isomorphic fashion. While x 's essence indicates precisely the kind of thing that x is, x is (essentially) precisely that kind of thing.²⁰ This idea will be important in carrying out our second task. For the concept of “precisely what something is,” together with the primacy formula “not being said of anything other in nature,” can help specify the sort of *per se* predication Aristotle deploys to characterize essence in *Metaphysics* Z4. With this in mind, let us discuss briefly Aristotle's “official” account of *per se* predication in *Posterior Analytics* 1.4.

There is widespread agreement that *Metaphysics* Z4 specifies essence by rejecting the second sort of *per se* predication introduced in *Posterior Analytics* 1.4. Equally, commentators argue that the primacy condition is cognate with the first type of *per se* discussed in this chapter of the *Analytics*.²¹ The second sort of *per se* is understood as follows:

*Per se*₂: x is *per se*₂ F just in case x is part of F 's essence (referred to in F 's defining account; *APo.* 1.4, 73a37–b3).

For instance, number is *per se*₂ odd (or even) as being odd (or being even) is defined as being a number of a certain sort (odd/even =_{def} ... number ...). Aristotle's view of the first type of *per se*, on the other hand, can be summarized as follows:

*Per se*₁: x is *per se*₁ F just in case F is part of x 's essence (referred to in x 's defining account; *APo.* 1.4, 73a34–37).

For example, having lines/sides belongs *per se*₁ to all triangles. For the definition of triangle is given in terms of lines/sides of a specific sort (triangle =_{def} ... line/side ...). It is clearly true that *per se*₁ attributes such as having three sides or being a plane figure are essential features of a triangle. The primacy condition as specified in *Metaphysics* Z4, however, requires that an essence-possessor be non-different in nature from its essence. It is difficult to see how being a plane figure or having three sides could satisfy this requirement. For being a triangle and being a plane figure or having three sides just are not the same in nature.

20 For a detailed account of my view of the phrase $\acute{o}\pi\epsilon\alpha\tau\iota$ and its cognate terms see my “Essence and *per se* Predication,” 143–146; 154–157; and especially nn26, 40, and 41.

21 Thus, for example, Ross, *Metaphysics*, 2: 168; Bostock, *Z and H*, 87.

If so, the notion of *per se*₁ does not seem equivalent to primacy as understood in *Metaphysics* Z4.

There is a conservative way in which to overcome this difficulty. We could argue that, while some *per se*₁ attribute or other belonging to a (type of) object does not cover the primacy condition, all of them taken together do so. For, after all, being a triangle and being a closed plane three-angled or three-sided figure seem to be non-different in nature. If this is correct, primacy and *per se*₁ can come together without difficulty.

There is, however, an alternative way in which to link *Posterior Analytics* 1.4 and *Metaphysics* Z4, one which also takes into consideration the latter chapter's insistence on the notions of "not being said of anything other in nature" and "precisely what something is." For, in my view, these notions play a crucial role in Aristotle's third type of *per se* as set out in *Posterior Analytics* 1.4:

Moreover, certain items are not said of some different underlying subject, as, e.g., whereas what is walking, in being something different, is walking (and similarly for what is white), substances, i.e. whatever signifies a this, are not precisely what they are in virtue of being something different²² [*APo.* 1.4, 73b5–8: ἔτι ὁ μὴ καθ' ὑποκειμένου λέγεται ἄλλου τινός, οἷον τὸ βαδίζον ἕτερόν τι ὃν βαδίζον ἐστὶ καὶ τὸ λευκόν, ἢ δ' οὐσία, καὶ ὅσα τὸδε τι σημαίνει, οὐχ ἕτερόν τι ὄντα ἐστὶν ὅπερ ἐστίν] (Barnes's trans. with minor changes).

Similarly to the usual, non-predicational construal of primacy in *Metaphysics* Z4, *per se*₃ is normally understood as picking out particular substances which are not predicated of anything else.²³ In this view, because particular substances are ultimate subjects of this sort – involving no predicational structure at all – they are *per se*₃ entities. It is not clear, however, that Aristotle's present claims

²² Notice that the negation at 73b8 ("are *not* precisely what they are") is due to the complement "by being something different." Read affirmatively, this claim is equivalent to "substances are precisely what they are in virtue of being something non-different." This last notion of non-difference is virtually the same as non-difference in nature in *Metaphysics* Z4.

²³ See W.D. Ross, *Aristotle's Prior and Posterior Analytics* (Oxford, 1949), 519. Jonathan Barnes, *Aristotle: Posterior Analytics* (Oxford, 1994), 114–117, notes that this third type of *per se* refers to entities which exist in their own right or independently of others, as opposed to entities whose existence depends on that of others. He helpfully points out, however, that while *per se*₃ appears "ontological" in this manner, it "is founded on considerations of predication."

place any emphasis on the idea of ultimate subjecthood. For he does not argue that *per se*₃ items are not said of anything else at all. Rather, he maintains that they are not said of any subject which is *different from* them (73b5–6: μὴ καθ’ ὑποκειμένου λέγεται ἄλλου τινός). To be sure, this does not prevent particular substances from qualifying as *per se*₃ entities. Equally, however, it does not limit the status of being *per se*₃ exclusively to particular substances. Hence, for instance, while being human and being an animal of a specific sort can be predicationally linked, they are not said of each other as essentially different items.

The second point made in this passage from the *Analytics* which is important for the logical discussion of *Metaphysics* Z4 is that a *per se*₃ entity is *precisely that which it is* without being anything other in nature from itself (or: “is not precisely that which it is by being something different in nature from itself”; 73b8: οὐχ ἕτερόν τι ὄντα ἐστὶν ὅπερ ἐστίν). Here the idea of non-difference in nature is combined with the notion of being precisely that which something is, a crucial characterization deployed in *Metaphysics* Z4 not only for essences but also for primaries or essence-possessors (1030a3–6). It seems plausible, then, to understand the primacy condition and the type of *per se* item that essence is taken to be in *Metaphysics* Z4 on the basis of *per se*₃ predication as I just described it.

Posterior Analytics 1.4, however, is not the only context which can shed light on the logical discussion of *Metaphysics* Z4. Aristotle argues in an explicitly logical fashion in *Posterior Analytics* 1.22 (82b35–36; 84a7–8). More importantly, this logical argument has important links with the predication material we encounter in *Metaphysics* Z4 and *Posterior Analytics* 1.4:

Further, those items which signify substance signify precisely the type of thing that something is or precisely the certain type of thing that something is about this thing, of which they are predicated; those which do not signify substance, but are said of some different underlying subject which is neither precisely this type of thing nor precisely this certain type of thing, are accidental, just like (e.g.) being white of man. For man is neither precisely what white is nor precisely what a certain type of white is, but presumably animal; for man is precisely an animal. Items which do not signify substance, however, must be predicated of some underlying subject, and there cannot be anything white which is white without being something different [*APo.* 1.22, 83a24–32: Ἐτι τὰ μὲν οὐσίαν σημαίνοντα ὅπερ ἐκεῖνο ἢ ὅπερ ἐκεῖνό τι σημαίνει καθ’ οὗ κατηγορεῖται ὅσα δὲ μὴ οὐσίαν σημαίνει, ἀλλὰ κατ’ ἄλλου ὑποκειμένου λέγεται ὁ μὴ ἔστι μήτε

ὅπερ ἐκεῖνο μήτε ὅπερ ἐκεῖνό τι, συμβεβηκότα, οἷον κατὰ τοῦ ἀνθρώπου τὸ λευκόν. οὐ γάρ ἐστιν ὁ ἄνθρωπος οὔτε ὅπερ λευκόν οὔτε ὅπερ λευκόν τι, ἀλλὰ ζῶον ἴσως· ὅπερ γὰρ ζῶον ἐστιν ὁ ἄνθρωπος. ὅσα δὲ μὴ οὐσίαν σημαίνει, δεῖ κατὰ τινος ὑποκειμένου κατηγορεῖσθαι, καὶ μὴ εἶναί τι λευκόν ὃ οὐχ ἕτερόν τι ὄν λευκόν ἐστιν] (Barnes's trans. with changes).

The first important point is that this section of *Posterior Analytics* 1.22 takes up the notion of *per se*₃ from the earlier chapter of the same work. Aristotle holds that attributes which indicate *ousia* are predicated of a subject without being other in nature from it (83a24–26: τὰ μὲν οὐσίαν σημαίνοντα ... καθ' οὗ κατηγορεῖται. ὅσα δὲ μὴ οὐσίαν σημαίνει, ἀλλὰ κατ' ἄλλου ὑποκειμένου λέγεται; cf. a31–32: ὅσα δὲ μὴ οὐσίαν σημαίνει, δεῖ κατὰ τινος ὑποκειμένου κατηγορεῖσθαι, καὶ μὴ εἶναί τι λευκόν ὃ οὐχ ἕτερόν τι ὄν λευκόν ἐστιν). Here the formulae “not being said of a different subject” and “being precisely what something is without being something different” suggest that Aristotle is discussing *per se*₃ predication as described in *Posterior Analytics* 1.4. For this earlier chapter, too, employs exactly those formulae to characterize *per se*₃ items (73b5–6; 8). Second, and more importantly, *Posterior Analytics* 1.22 clearly takes this sort of *per se*₃ items as involving predicational structure. For this chapter's *ousia*-signifying attributes are clearly held to be predicated of the subjects that have the relevant *ousia* (83a24–25). If it is correct to think that these *ousia*-signifying attributes are *per se*₃, it follows that the notion of *per se*₃ in *Posterior Analytics* 1.4 also allows for predicational structure.

Moreover, *Posterior Analytics* 1.22 strengthens the link with the predicational material we examined in *Metaphysics* Z4. The claim that *ousia*-signifying attributes – those which are predicated of the corresponding subjects – signify “precisely the type of thing that something is” or “precisely the certain type of thing that something is” is virtually equivalent to the position adumbrated in *Metaphysics* Z4. Just as *Metaphysics* Z4 characterizes essence as ὅπερ τι or ὅπερ τόδε τι (1030a3–5), *Posterior Analytics* 1.22 claims that *ousia*-signifying attributes signify ὅπερ ἐκεῖνο or ὅπερ ἐκεῖνό τι (83a24–25; cf. 27; 29–30). The conclusion is that the attributes Aristotle is considering are those which indicate the essence of the subject they are predicated of. These results are remarkably similar to those reached in *Metaphysics* Z4. First, essential attributes are *per se*₃ precisely in that they satisfy a version of the primacy condition, for they are not different in nature from the relevant essence-possessor they are said of. Second,

they indicate “precisely that which something is” regarding the subject they are predicated of.²⁴

There is a possible misunderstanding which we should disabuse ourselves of. I remarked earlier that the logical discussion of *Metaphysics* Z4 can be illuminated on the basis of the overtly logical context of *Posterior Analytics* 1.22 and the related material from 1.4. I also argued that the similarity between the logical explorations of the two separate treatises consists in the way in which predicational considerations (about *per se* predication specifically) seem to ground metaphysical positions about essence. However, it does not follow from this that the logical level of the *Metaphysics* is identical with that of the *Analytics*. For as has been noted, logical discussions, as well as the notion of λογικῶς quite generally, are context-dependent. If conducted in distinct contexts, logical inquiries, even if they are into similar subject matter, may differ dramatically just because they are embedded in different Aristotelian treatises. What is λογικῶς in the *Metaphysics*, then, may differ significantly from what is λογικῶς in the *Analytics*.

My interpretation does not, however, depend on identifying the logical discussions carried out in the two separate treatises. It relies only on a simple idea of analogy between these two discussions. The foci of this analogy consist of the predicational notions discussed earlier: primacy, *per se* predication, non-difference in nature, and being “precisely the type of thing that something is.” There is a better way in which to state the present analogy. First, we should point out that the *Posterior Analytics* as a whole is by no means a merely logical treatise. The predicational material of a logical character that we encounter in *Posterior Analytics* 1.4 and 1.22 is radically enriched with non-logical, causal, and explanatory concerns in 2.8–11 (for example). In the light of this, the analogy between the *Analytics* and the *Metaphysics* would run as follows. The relation between the logical discussions of *Posterior Analytics* 1.4 or 1.22 and the admittedly non-logical arguments advanced in 2.8–11 is remarkably similar to, if not the same as, the link between the logical inquiry of *Metaphysics* Z4 (as well as Z5–6) and the non-logical contexts introduced later in *Metaphysics* Z. In section 5 I shall argue that *Metaphysics* Z17 fills in the gaps of the logical argument of earlier chapters with non-logical considerations in a way significantly similar to (if not identical with) the way in which *Posterior Analytics* 2.8–11 supplements the logical theses put forward in 1.4 and 1.22.

24 The relations between *Metaphysics* Z4 and *Posterior Analytics* 1.4 and 1.22 are explored in greater detail, and are underpinned with more substantive arguments in my “Essence and *per se* Predication,” 157–165. My present aim is only to show how the predicational reading can make sense of these different logical parts of Aristotle’s works.

4. Predicational Unity and Ontological "Inclusivism": Metaphysics Z4–5 and Topics 1.9

Metaphysics Z4 introduces two importantly distinct theses about essence and definition. The first is based exclusively on the primacy condition, understood as non-difference in nature between predicationally interrelated items. After setting out the primacy condition in these terms, Aristotle argues that definition belongs only to items that fulfill this condition (1030a7–11). Immediately he goes on to write:

Hence, the what-it-is-to-be will not belong to things which are not species of a genus but to species of a genus alone ...; however, there will be an account of what each of the others too signifies – if there is a name – stating that this belongs to that, or instead of a simple account a more precise one; but there will be neither a definition nor a what-it-is-to-be [*Metaph.* Z4, 1030a11–13; 14–17] (Bostock's trans. modified).

Here "species of a genus" are the only types of entity which cover the primacy condition. Similarly, at 1030a5–6, Aristotle holds that only substances are "precisely certain types of thing" (τόδε), and so only substances are, properly speaking, essence-possessors. The importance Aristotle attaches to primacy seems to drive him to formulate the following restrictive or rigid thesis about essence and definition:

(RT) Only primaries, items which satisfy the primacy condition (i.e. substances or species), have essences and get defined.

Non-primaries, by contrast, items which are predicated of each other but are different in nature, do not have essence or definition at all. Hence, for instance, non-substance attributes, such as walking, or accidental compounds, such as walking Socrates, are left without any essence or definition. The passage just quoted, however, allows that non-substances have non-definitory accounts. In these accounts there is merely sameness of signification between a name or expression and a distinct, more elaborate account which spells out what the relevant name or expression signifies. But this is not the same as having a proper definition. Nor does it entail that non-substances are the sorts of entity which possess essences.

Aristotle is aware of the difficulties that beset (RT). For (RT) is not sensitive to the difference between the accounts of non-substance attributes or acci-

dental compounds and spurious accounts such as that in which a name is stipulated for the *Iliad* and signifies the same as the whole poem comprising all twenty-four rhapsodies. According to (RT) this latter artificial account is on a par with the non-definitory accounts of non-substance attributes or accidental compounds, since sameness of signification obtains in both cases. To tackle this difficulty, Aristotle seeks to provide a more fine-grained position about essence and definition in the following passage:²⁵

But this is clear, that the primary and unqualified types of definition and what-it-is-to-be are of substances. Nonetheless, they are of the others too similarly, albeit not primarily. For it is not necessary that, if we posit this, there should be a definition of anything whatsoever which signifies the same thing as some account, but only [of that which signifies the same thing] as a certain type of account; and this is so if an account is of one thing: one thing not by being continuous like the *Iliad* or what is bound together, but in one of the ways in which one is spoken of; and one is spoken of just as being is; and being in one way signifies a this, in another quantity, in yet another quality. For this reason, there will be an account and a definition of white man too, but in another way of being white and of substance too [*Metaph.* Z4, 1030b4–13] (Bostock’s trans. with minor changes).

The view of essence and definition sketched in this passage does not place importance on primacy alone. It also invokes the criterion of predicational or categorial unity. Sameness of signification, by contrast, is relegated to a merely necessary condition for having a definition.

In this view, non-substance attributes and accidental compounds have essences and definitions despite falling short of the primacy condition, which is satisfied by substance alone. For the accounts of these non-substance cases are predicationally or categorially unified, as they ascribe an attribute to a subject in one or another of the ways of the distinct categories. This view can be summarized in the following “liberal” thesis:

25 *Metaphysics* Z4, 1030a17–b32, advances a long argument in favour of primary, or unqualified, and secondary, or derivative, ways of having essence and definition. While this argument is important for the final formulation of Aristotle’s position at 1030b4–13, I shall not discuss it at present. I examine this section of *Metaphysics* Z4 and Aristotle’s different positions about essence and definition in some detail in my “Essence and *per se* Predication,” 170–176.

(LT) Substances (as primaries) have essence and definition in the primary or unqualified way (1030a22; 23; 29–30; 1030b5: πρῶτως; ἀπλῶς), while non-substances in a secondary, derivative, or qualified way (1030a22; 25; 26; 30; 31; 1030b6–7: ἐπομένως; πῶς; οὐχ ἀπλῶς; εἴτα).

In this thesis, spurious, *Iliad*-style cases are left definitionally orphan, as they satisfy only the weak criterion of sameness in signification. Non-substance attributes or accidental compounds, by contrast, have essence and definition even if only in an attenuated, secondary fashion, for they meet only the criterion of categorial unity but not the primacy condition. Substances, on the other hand, have essence and definition in the primary way as they fulfil not only predicational unity but also primacy.

Metaphysics Z5 also seems to be operating with the same distinction between (RT) and (LT):

Hence either none of these things [i.e. non-substances such as snubness and other “coupled” items] have a what-it-is-to-be and a definition, or – if they do – it must be in another way [ἄλλως], as we have said [*Metaph.* Z5, 1030b26–28] (Bostock’s trans. slightly modified).

But if they [i.e., coupled items] do have a definition, then either it must be in another way [ἄλλον τρόπον], or definition and what-it-is-to-be must be spoken of in many ways, as was said before. Thus on the one alternative there will not be a definition or a what-it-is-to-be of anything but substances [ὥδι μὲν οὐδενὸς ... πλὴν ταῖς οὐσίαις], and on the other there will [ὥδι δ’ ἔσται] (1031a7–11, Bostock’s trans.).

The only difference between the two chapters is that *Metaphysics* Z4 seems to settle on the less radical view of (LT), whereas Z5 seems indecisive about, or even indifferent to, the choice as between (RT) and (LT).

Setting aside this innocuous discrepancy, it is fair to conclude that the overall position about essence and definition in these two chapters is reached and grounded on the basis of predicational notions and criteria. Primacy (not being predicated of anything different in nature) and predicational unity (constituting a categorially single or unified predicational formula) underwrite the formulation of, and the distinction between, (RT) and (LT).

Furthermore, the combination of primacy with the weaker requirement for categorial unity seems to support the more viable position encapsulated in

(LT). It is true that, in this position, Aristotle draws up a hierarchy of primary and secondary ways of having essence and definition. In fulfilling primacy the definition of a substance does not mention any entities which are different in nature from the *definiendum*. For example:

Human [KIND] =_{def} a certain kind of rational biped animal,

where being human, being this specific kind of rational being, and being this certain kind of animal are essentially the same. The definitions of non-substances, by contrast, refer to some substance or other to which the *definiendum* (a quality, quantity, or any other sort of non-substance categorial being) belongs. Because they depend on (the essence and definition of) substance in this fashion, the definitions of non-substances are derivative or secondary. The reason for their reduced status is precisely the fact that they meet only the weak criterion of predication unity but fall short of primacy. Thus, the definition of a quality such as being white would run as follows:

Being white =_{def} a colour quality of a specific sort belonging to a bodily surface of some (type of) substance or other.

To display the sort of predication unity codified in the *definiens* phrase of this formula, the definitions of non-substances must refer to some substance or other, an entity which is different in nature from the non-substance that is being defined. They fail to meet the primacy condition, then, and are derivative insofar as they depend in this way on (the essence and definition of) substance.

At the same time, however, Aristotle expresses a certain degree of ontological inclusivism. For he contends that substances as well as non-substances have essence and definition, despite their distinct ontological status and the dependence of the (definitions of the) latter on the (definitions of the) former. My diagnosis will be that this sort of ontological inclusivism grows out of the merely predication constraints which govern the logical discussion of *Metaphysics* Z4–5.

To clarify and underpin this hypothesis, let us examine briefly the following important passage taken from *Topics* 1.9. Although Aristotle does not explicitly characterize the level of inquiry as logical, the basic notions and premises he deploys in this chapter are paradigmatically predication, for he claims that all four predicables “signify” any and every category of being.

For an accident, a genus, a *proprium* and a definition will always be in one of the[se] categories; for all the premises [produced] by means of them signify [σημαίνουσιν] either a what-it-is or a quantity or a quality or some one of the other categories. And it is clear from these that an [expression or speaker?] signifying the what-it-is [ὅ τὸ τί ἐστι σημαίνων] will sometimes signify a substance [ὅτ' ἐ μὲν οὐσίαν σημαίνει], sometimes a quantity, sometimes a quality and sometimes some one of the other categories. For, supposing the example under consideration is a man, if it says [φῆ] that the example is a human or an animal, then it says what it is [τί ἐστι λέγει] and signifies substance [οὐσίαν σημαίνει]. On the other hand, supposing the example under consideration is a white colour, if it says [φῆ] that the subject is a white or a colour, then it says what it is [τί ἐστι λέγει] and signifies a quality [ποιὸν σημαίνει]. Similarly, supposing that the example under consideration is a foot-long length, if it says [φῆ] that the example is a foot-long length, then it says what it is [τί ἐστι λέγει] and signifies a quantity [ποσὸν σημαίνει]. And likewise with the other [categories] (*Topics* 1.9, 103b23–35, Robin Smith's trans. with changes).

Aristotle's claim that the four predicables are in one or another of the ten categories is exemplified using the predicable of definition or what-it-is. For present purposes, we can assume that a definition is an account of the what-it-is, while the what-it-is itself is virtually equivalent to the notion of essence (what it is to be *F*; τί ἦν εἶναι). Indeed, there are several earlier passages in *Topics* 1, where Aristotle seems to presuppose just this view (1.4, 101b19–23; 1.5, 101b38; cf. 102a18–19; 1.8, 103b9–12). The idea, then, is that the predicable of what-it-is can “signify” the being of any and every category (103b27–29). If so, essence and definition belong to substances and non-substances alike, in the manner of the inclusivist position that *Metaphysics* Z4–5 codifies in (LT).

It is important to clarify the conceptual apparatus with which *Topics* 1.9 achieves this result. Aristotle seems to be taking linguistic items, predicational statements or expressions, as using the predicable of what-it-is, and so as “expressing” the what-it-is (103b30; 31; 34: φῆ; 30; 32; 34: τί ἐστι λέγει; 36: λέγεται). This turn of phrase may suggest that the predicable term of what-it-is is a component of a predication, and is linked to the relevant subject term (a relation obtaining between linguistic items). Or it may entail that by virtue of this predicable term the predicational formula picks up a certain sort of real-world entity, the what-it-is or essence of the subject term's referent.

Aristotle, however, assigns the role of “signifying” kinds of being in any category whatever to the predicable of what-it-is itself (27: ἡ τί ἐστιν ἡ ... ἡ τῶν ἄλλων τινὰ κατηγοριῶν σημαίνουσιν; 28: ὅτε μὲν οὐσίαν σημαίνει, ὅτε δὲ ποσόν ...; 31: οὐσίαν σημαίνει; 32–33: ποιὸν σημαίνει; 35: ποσὸν σημαίνει; 37–39: τί ἐστι [= οὐσίαν] σημαίνει ... οὐ τί ἐστι [= οὐσίαν] σημαίνει). This could be a way in which to describe the signification relation between a linguistic item (definition) and the world (substances, quantities, qualities, etc.). Equally, however, it could be seen as the relation between a real-world entity, an essence, and the real-world possessor of this essence (a substance, quality, quantity, etc. that has this essence). In this last view, an essence or the what-it-is “indicates” or “reveals” (the being of) substance, quality, quantity, etc.²⁶

With this distinction firmly in place, we can assess better the import of the examples offered in *Topics* 1.9. The linguistic, predication, formula

[1] This is a human/animal,

uses the predicable of what-it-is or definition, whereas the predicable itself – the term “human/animal” or the attribute being a human/animal – signifies or reveals (the being of) a substance, this human. Contrast the following statements:

[2] This is a white/colour.

[3] This is a foot-long/length.²⁷

While both predications use what-it-is predicables, neither of these predicables signifies (the being of) substance. Rather, the predicable of what-it-is in [2]

26 Only once does *Topics* 1.9 use a form of the verb σημαίνω to describe the relation between statements/expressions (linguistic items) and the predicable of what-it-is (103b28: ὁ τὸ τί ἐστι σημαίνων [sc. λόγος or ἄνθρωπος?]). In the very same breath, however, the notion of signification is also used for the relation between the predicable of what-it-is and categorial being, in line with the distinction just drawn (28–29: ὅτε μὲν οὐσίαν σημαίνει, ὅτε δὲ ποσόν ...). It seems reasonable, at any rate, to conclude that Aristotle employs fairly consistently the distinction between linguistic items that “express” what-it-is and the what-it-is itself – the essence or the definition – that “signifies” (the being of) real-world categorial entities.

27 In [1], [2], and [3] I use predicate terms such as “human/animal,” “white/colour,” and “foot-long/length” to capture Aristotle’s disjunctive examples “a human or an animal” and “white or a colour” (103b30; 32). While Aristotle does not use a disjunctive example in his third case, I have used “foot-long/length” in [3] for the sake of uniformity.

signifies quality, whereas the one in [3] signifies quantity. By contrast, for a subject term referring to a quality, the predication

[4] This takes up a three-square-metre surface,

does not use the predicable of what-it-is but (presumably) that of an accident (103b24: συμβεβηκός). Similarly, for a subject term referring to a quantity, the predication

[5] This is beautiful,

does not deploy the what-it-is but an accident.²⁸

The conclusion is that definition and essence – in the form of the τί ἐστι predicable – belong not only to substances but also to non-substance categories such as qualities, quantities, etc. This is virtually equivalent to the inclusivist position established in *Metaphysics* Z4–5 and formulated earlier in terms of the liberal thesis (LT). *Metaphysics* Z4–5 operates with the merely predicational constraint of categorial unity, in which one attribute is said of one subject in one of the modes of the categories. Similarly, *Topics* 1.9 argues exclusively from premises about predicables: what is (truly) said of what, in one or another of the ways of the categories. Remarkably similar predicational considerations, then, seem to be giving rise to equivalent results reached in these distinct parts

28 There is a difficulty with [2] and [3]. The claim that these predications use the predicable of what-it-is might be criticized as unwarranted, for it might be argued that the demonstrative “this” used in [2] or [3] should be picking up a (type of) object in the category of substance, a *thing* which *happens* to be white or one foot long. If so, [2] and [3] do not use the predicable of what-it-is but that of accident. It would not be hard for Aristotle to rebut this objection. He could flatly deny the objector’s claim that the referents of the demonstratives ought to be picking up (types of) substances. For his present interest is not in the underlying metaphysical structure of dependency of non-substances upon substances. Rather, his emphasis falls on the predicational formulae themselves, their use of the predicable of what-it-is, and the way in which this predicable can signify or reveal any and every type of categorial being. His reply would effectively be that the demonstratives could be picking up simply a quality or a quantity but not a compound (an object with a quality or a quantity). After all, this is exactly how he constructs the examples at 103b31–32 and 33–34: in using the term “to be set apart for consideration” (χωρώματος λευκοῦ ἐκκειμένου ... τὸ ἐκκειμένον; πηχυαίου μεγέθους ἐκκειμένου ... τὸ ἐκκειμένον), he implies that what is isolated and referred to is not a compound but is just a quality or just a quantity.

of Aristotle's work. It is plausible to infer from this that the logical level of inquiry that is dominant in *Metaphysics* Z4–5 consists in exactly this predicational framework, which is obviously at work in *Topics* 1.9 too.

There is, however, a significant discrepancy between the two treatises. *Metaphysics* Z4–5 acknowledges the metaphysical primacy of substance over non-substances, for its liberal thesis (LT) distinguishes between primary and secondary ways in which substance and non-substances (respectively) have essence and definition. *Topics* 1.9, by contrast, does not explicitly appreciate the metaphysical primacy of substance. For this reason, it is blind to the distinction between primary and secondary modes of having essence and definition. Rather, it contends indifferently that any and every type of categorial being can be “signified” by the predicable of what-it-is, omitting to privilege substance with any sort of primacy over qualities, quantities, etc.

There is a sense in which this mismatch between the *Topics* and the *Metaphysics* constitutes no serious problem. We could maintain that what is important is that there is agreement about the crucial, inclusivist component of Aristotle's view in that both treatises subscribe to the doctrine of “essence and definition for all.” The absence of the distinction between primary and secondary types of essence or definition suggests simply that *Topics* 1.9 focuses on predicational formulae or linguistic items without considering the underlying structure of metaphysical predication. Perhaps this is because this chapter is, loosely speaking, at a “slightly more logical” level of discussion than the logical inquiry of *Metaphysics* Z4–5 is.

While this line of argument is not flagrantly unsound, it seems less than satisfactory. There is a better way in which to align these two separate logical discussions. Using this strategy we could see even *Topics* 1.9 as tacitly operating with the distinction between primary and secondary sorts of essence and definition. Thus, at 103b35–39, Aristotle remarks:

For any of these, both in the case in which it is said about the thing itself what its nature is and in the case in which the genus is said about the thing itself, signifies what it is [substance]; but when it [the what-it-is predicable?] is said about some different thing, then it does not signify what it is [substance], but how much or what sort or some one of the other categories [ἐκαστον γὰρ τῶν τοιούτων, ἐάν τε αὐτὸ περὶ αὐτοῦ λέγεται ἐάν τε τὸ γένος περὶ τούτου, τί ἐστι [= οὐσίαν] σημαίνει ὅταν δὲ περὶ ἑτέρου, οὐ τί ἐστι [= οὐσίαν] σημαίνει ἀλλὰ ποσὸν ἢ ποιὸν ἢ

τινα τῶν ἄλλων κατηγοριῶν] (*Topics* A.9, 103b35–39, Robin Smith's trans. modified).

This argument can be viewed as employing the notion of difference or non-difference (in nature, I take it) between two predicationally interlinked items. Hence, in cases in which the predicable of what-it-is (either the whole essence or the genus) is said of some subject which is the same in nature (103b36: αὐτὸ περὶ αὐτοῦ), it reveals (the being of) substance. If we deem this claim equivalent to the primacy condition invoked in *Metaphysics* Z4, it follows that these are primary cases of having what-it-is. By contrast, in cases in which the what-it-is is predicated of some subject that is different in nature from it (103b37: περὶ ἑτέρου), this predicable indicates non-substance categorial being. If these cases are understood as falling short of the primacy requirement, they correspond to secondary modes of having what-it-is. For they definitely fulfil the requirement of predicational unity as they ascribe one attribute to one subject in one of the distinct (non-substance) categories.

More importantly, however, Aristotle's examples of non-substance cases of having what-it-is could be seen as implying the distinction just drawn. While [1] satisfies the primacy condition (for being human and this human are non-different in nature), [2] and [3] fail to do so. This becomes clearer if [2] and [3] are properly filled in. For example, a predication which uses the complete predicable of what-it-is for this white colour would run as follows:

[2'] This is a white/colour [quality] belonging to a bodily surface of some [type of] object or other [substance].

Analogously, the complete what-it-is for this foot-long length is included in the following predication:

[3'] This is a foot-long/length [quantity] belonging to a dimension/side of some [type of] solid object or other [substance].

In other words, it is of the essence of a colour quality such as being white to belong to the surface of some substance or other, just as it is of the essence of a length quantity such as being one foot long to belong to the side of some solid object or other.

It is clear that in both cases the what-it-is involves an entity which is different in nature from the referent of the subject term. In [2'] a substance with a surface is essentially different from the quality of being white/colour. In [3'] a solid body with a dimension is essentially different from the quantity of being one foot long/length. Neither of these cases, then, meets the primacy condition, understood in terms of non-difference in nature. Both [2'] and [3'], however, are categorially unified in that they predicate one attribute of one subject in one or another of the different ways of the (non-substance) categories. Hence, both are instances of the secondary or derivative way in which non-substances have essence and definition.

If this is correct, the logical discussions of *Topics* 1.9 and *Metaphysics* Z4–5 not only agree in the inclusivist, “essence and definition for all” doctrine, they also accept the “ordered” component of this view, in which substances have essence and definition primarily, whereas non-substances have them only derivatively. While *Topics* 1.9 does not, on its surface, expound this ordered view, it does possess the conceptual resources with which to imply and support it.

5. *Logical Inquiry and Beyond: Metaphysics Z17*

It should be emphasized at the outset that *Metaphysics* Z17 takes radical steps beyond the predicational framework developed in *Metaphysics* Z4–5. This is clear from the chapter’s opening lines, which explicitly seek to make a fresh start in the study of substance:

Let us now take a fresh starting point and say what, and what kind of thing, substance should be said to be. ... Let us start, then, from the fact that substance is a principle and a cause of some sort [ἡ οὐσία ἀρχὴ καὶ αἰτία τις ἐστίν] (*Metaph.* Z17, 1041a6–7; 9–10; Bostock’s trans.).

The non-logical idea invoked in this passage is that substance is a principle and a cause for the being of derivative, non-substance entities. Aristotle develops this idea using as a starting point the explanatory and causal model advanced in *Posterior Analytics* 2.8–11. In section 3, I noted that these chapters are by no means logical in the manner of *Posterior Analytics* 1.4 or 1.22. Rather, they formulate and establish the following two parallel theses:

- (1) Our definitional practices and our explanatory knowledge in terms of scientific demonstration are interdependent.
- (2) Metaphysical relations of identity fixing and relations of causation anchored in the real world are interdependent.²⁹

Aristotle seems to hold that (2) underwrites (1). In the *Analytics*, however, both of these interdependence theses are confined to, and are illustrated on the basis of, cases of process types such as thunder or lunar eclipse. Let me spell this out briefly.

Aristotle maintains that in seeking to know the phenomenon of thunder, for example, we are initially equipped with knowledge of the signification of the term "thunder" as a certain type of noise or cloud noise. To prove and explain the existence of this phenomenon is to prove that, and to explain why, this type of noise indeed belongs to the clouds:

Noise (of type N) belongs to all cases of quenching of fire (of type Q).

Quenching of fire (of type Q) belongs to the clouds (perhaps: all clouds of kind C).

Noise (of type N) belongs to the clouds (perhaps: all clouds of kind C).

The middle term of this demonstrative syllogism ("quenching of fire") refers to the cause of the clouds' possession of the feature of being noisy in the relevant manner. This is a sort of real-world causal relation, which in the present thunder example is identified with efficient causation (cf. *APo.* 2.111, 94a20–24 and a36–b8).

At the same time, however, Aristotle argues that in grasping this proof we are also in a position to read off from it the "real" or causal definition of thunder, the account of its real-world essence which explains its being. In this def-

29 The epistemic and metaphysical theses (1) and (2) have been discussed extensively by David Charles. He argues for the interdependence of defining and explaining and the co-determination of essence and cause. See his *Aristotle on Meaning and Essence* (Oxford, 2000), mainly chs. 8 and 10; see also his "Definition and Explanation in the *Posterior Analytics* and *Metaphysics*," in *Definition in Greek Philosophy*, ed. David Charles (Oxford, 2010), 286–328.

inition the middle term, referring to the efficient cause, will play a central role:

Thunder $_{[TYPE]}$ =_{def} noise (of type N) in the clouds (of type C) brought on by fire being quenched (of type Q).

Again, this view presupposes not simply the epistemic position (1) that there is a match between our practice or our knowledge of explanatory demonstration and that of definition. It also rests on the underlying metaphysical thesis (2) that essence and cause are interdependent. The basic element in thunder's essence, its fundamental identity-fixer, is its efficient cause. Conversely, one of the crucial features of the thunder's efficient cause, one without which it could not operate as the efficient cause it is, is that it determines the kind's identity.³⁰

Just a superficial look at the examples of eclipse and thunder offered in *Metaphysics* Z17 is sufficient to suggest that Aristotle invokes this causal-explanatory model of essence from the *Analytics* (1041a15–16; 24–25). A more cautious reading shows that he aims to extend this model beyond process kinds so as to include substance kinds too, such as the type human (1041a27–b9).³¹ Take the following explanatory proof:

Arrangement in this specific fashion belongs to being a rational soul.

³⁰ It should be emphasized that this view is not circular. It does not spell out the content of the proof's middle term merely by saying that it is "causal" or "explanatory," nor does it hold simply that it must be an essential feature of the kind. Rather, it invokes specific, real-world causal relations: here, in the thunder example, we have efficient causation, while in other cases Aristotle speaks of grounding-material or final causation (cf. *APo.* 2.11, 94a20–24).

³¹ Before taking up kinds of natural substance, Aristotle initially uses examples of kinds of artefact, such as a house. In this example certain types of material (e.g., bricks and stones) are characterized by the relevant house structure or arrangement (*Metaph.* Z17, 1041a20–27). Hence:

Having the covering structure belongs to the essence of a house.

The essence of a house belongs to these kinds of bricks and stones.

The covering structure belongs to these kinds of bricks and stones.

Here the causal middle term, the essence of the house, is identified with the final cause: being a covering/shelter for the sake of protecting humans and their belongings. Correspondingly, the definition of the house kind would run as follows: House $_{[TYPE]}$ =_{def} bricks and stones shaped as a covering for the sake of protecting humans and their belongings.

Being a rational soul belongs to this type of organic/functional body.

Arrangement in this specific fashion belongs to this type of organic/functional body.

From this we can formulate the definition of the kind as follows:

Human [TYPE] =_{def} a certain type of organic/functional body arranged in this specific structure for the sake of being a rational soul.³²

On the basis of the epistemic thesis (1), it is clear that our explanatory knowledge of the proof regarding the kind human and our practice of defining this kind are interdependent. In the light of (2), this is because the identity-fixer of the kind human and the final cause for the sake of which this kind is as it is are also interdependent.³³

Clearly, this view is significantly richer than the logical, predication apparatus of *Metaphysics* Z4–5. For *Metaphysics* Z17 fills in the gaps in the logical discussions by employing the notions of principlehood, causation, and explanation. It also implies that definition, the account of a thing's essence, explains why the *definiendum* is as it is by referring to the principle or the cause of its being. At the same time, however, *Metaphysics* Z17 constitutes (or so I shall argue) a context in which this non-logical material coexists and integrates with the logical, predication claims made in the earlier chapters.³⁴

32 The demonstration and definition just offered as examples are schematic and need to be filled in. Presumably, their fully worked out versions would avoid (among other pitfalls) the use of dummy phrases such as "this certain type of body" or "this specific type of structure" without resorting (in a circular fashion) to the kind defined in order to specify these phrases. For present purposes, however, these details can be set aside.

33 I have formulated the explanatory proofs and the corresponding definitions of artefact types and natural kinds of substance not only consistently with the doctrine of *Posterior Analytics* 2.8–11 but also on the basis of the formulations and examples given at *Metaphysics* Z17, 1041a20–27 and b4–7. The textual and exegetical details of these last passages are extremely controversial, but our present discussion need not engage in debates of this sort.

34 At this point, my interpretation strongly disagrees with Burnyeat's construal of the relation between the logical framework of *Metaphysics* Z4–5 and the fresh, non-logical start of *Metaphysics* Z17. Burnyeat argues that the last chapter of *Metaphysics* Z does not presuppose or employ any of the logical results of the earlier chapters. Rather, it makes a radically fresh start which introduces completely novel considerations but does not build or improve on the logical material (see his *Map*, 56). In my coexistence

These parameters of coexistence and integration seem to lie at the heart of the following crucial passage:

It is clear, then, that what is sought is the cause – and this is the what-it-is-to-be [or essence; τὸ τί ἦν εἶναι], to speak logically [ὡς εἰπεῖν λογικῶς]³⁵ – which in some cases is that for the sake of which the thing is [as it is] (as presumably in the case of a house or a bed), while in some cases it is that which first began the change; for the latter too is a cause (*Metaph.* Z17, 1041a27–30; Bostock's trans.).

Here the logical level makes its contribution as an “abstract” or “formal” type of metaphysical inquiry into substance. At this level too substance is – consis-

and integration view, by contrast, *Metaphysics* Z17 does not forget about or discard the earlier logical material; more importantly, it introduces, formulates, and develops its non-logical theses by reference to the predicational results established within the logical inquiry. This disagreement between my reading and Burnyeat's construal is not limited to the relation between *Metaphysics* Z4–5 and Z17. It could also have implications for the interpretation of *Metaphysics* Z as a whole. Burnyeat's view of “non-linearity” takes the logical material of the earlier chapters as being somehow “deleted” or disregarded not only in the fresh start of *Metaphysics* Z17 but also in the other discrete thematic sections of the book. For he holds that *Metaphysics* Z7–9 (which, at any rate, he takes as a later insertion; see *Map*, 29–38), Z10–11 and Z13–16 do not build on the earlier material of Z4–6. Similarly, he argues that each of these sections of *Metaphysics* Z does not use any claims or arguments taken from the rest but is, in some measure, isolated. He holds that “it is not the case that the successive chapters build continuously upon the results of their predecessors. ... [T]here are no less than three fresh starts (at Z4, at Z13 and then, more radically, at Z17), where the discussion begins anew, setting aside the results achieved so far. This is not to say that those earlier results are rejected, only that they must not be presupposed” (*Map*, 4). It should be noted that my view of coexistence and integration does not reach the opposite extreme which is, in Burnyeat's words, to “treat Z as a linear treatise in which results continue to accumulate from one page to the next” (*ibid.*, 6). Burnyeat would certainly agree about some sort of coexistence and integration of the logical with the non-logical levels in *Metaphysics* Z17; he himself takes both levels as being present in this chapter (*ibid.*, 56–60). But he would deny that the logical apparatus of *Metaphysics* Z17 and (indirectly) its non-logical additions are dependent on the logical framework of Z4–5 in the way or measure that I take them to be.

35 At 1041a28 I follow Ross in reading τοῦτο δ' ἐστὶ τὸ τί ἦν εἶναι, ὡς εἰπεῖν λογικῶς together with the manuscripts. Jaeger offers no plausible reason for excluding this crucial sentence, which identifies the cause that primary substance is with the essence. He merely refers to “Alexander,” i.e. Michael of Ephesus, who says that the passage “is superfluous and has been inserted here by someone.” But this is not a good reason for expunging it.

tently with the opening lines of *Metaphysics* Z17 – a principle and a cause of being (1041a27–28: τὸ αἴτιον). Because the level of discussion is logical, however, the principle or cause that substance is can be characterized only in a thin manner as the essence of (or what-it-is-to-be) a type of thing. This notion is familiar from the logical explorations of *Metaphysics* Z4–5.

The non-logical component of the present argument, however, does not conflict with these logical considerations, nor does it discard or reject any of them. Rather, the idea seems to be simply that to specify the abstract notion of essence, and to characterize it properly as a principle and a cause, it is necessary to invoke weightier causal notions of efficient or final causation. In Aristotle's words, "this essence just is" – intrinsically, I take it – "an efficient or final cause" depending on the kind of case at issue (1041a28–30). Hence, essence is fully characterizable only by reference to these types of causal relation fixed in the real world. Moreover, taking seriously the metaphysical thesis (2), these efficient or final types of cause also function as identity-fixers of the relevant (kinds of) things. If so, they too are inextricably dependent on the notion of essence. The overall picture, then, is one in which the notions of essence and causation are not specifiable without each other. It seems plausible to infer from this that the logical and non-logical levels not only can be harmoniously combined but also are organically intertwined. For just as the logical notion of essence cannot be fully set out without the non-logical concepts of final or efficient causation, conversely too these non-logical causal notions carry with them the concept of identity-fixing, which grows out of the logical resources related to essence.³⁶

36 Remarkably, Burnyeat takes the logical inquiry to be dominant up to 1041a32. He claims that the main result of this logical section "is marked by 'It is clear, then' (φανερὸν τοίνυν) at 1041a27" (*Map*, 57). He thus maintains that the references to real-world final or efficient causes at 1041a29–32 do not yet signal any transition to the non-logical discussion. Rather, it is only form and its correlate, matter, which adduce non-logical considerations. He writes: "The idea that the cause of some kind of thing is its essence is a quite general, abstract idea that fits different cases in different ways. Sometimes the essence is the efficient cause, sometimes the final. 'But is not the final cause (and likewise the efficient cause) of a house frequently identified with its *form*?' Yes, but we must respect Aristotle's decision not to name it so here. 'To speak logically' [cf. λογικῶς at 1041a28] is precisely not to speak in terms of form and matter" (*ibid.*, 58; Burnyeat's emphasis). There are two main difficulties with Burnyeat's argument. First, the notions of final and efficient causation are already non-logical: for they bring in considerations about specific (as opposed to "abstract," "formal," or "general") causal relations fixed in the real world. Second, these types of cause also invoke the incontrovertibly non-logical notion of matter. For instance, the final cause essential to the house type (e.g., protecting humans and their belongings from wind, heat, and rain) is the real-world organizing principle, the identity-fixer, of the house's constituent

The coexistence and integration reading of *Metaphysics* Z17, however, can be sustained in more concrete terms too. Let us suppose that the notion of essence, which in this chapter is a sort of principle and cause, is understood as satisfying the primacy condition as described in the logical context of *Metaphysics* Z4–5. Essence, then, is not predicated of anything different in nature from itself. Nor does its being presuppose any predicationally interrelated items which are different in nature from each other. The *explanans* that essence is (the principle or cause of *Metaphysics* Z17) should comply with this predication requirement. The *explanandum*, by contrast, that of which essence is the principle and the cause, should fall short of the logically oriented primacy condition. Indeed, this logical material seems to be fully appreciated by, and incorporated into the non-logical framework of *Metaphysics* Z17. Let us see how this works.

First, Aristotle's argument is clearly shaped in terms of the *explanans-explanandum* schema just outlined. Substance, essence, and cause are understood as the objects of a successful inquiry into explanation, as the items which answer correctly the relevant "Why?" questions (see the occurrences of the various forms of ζητεῖν τὸ διὰ τί, τὸ αἴτιον, or τὴν αἰτίαν at *Metaph.* Z17, 1041a10; 11–12; 20–21; 22–23; 27–28; 31–32; 1041b7–8). Second, and more importantly, the *explanandum* of which essence is the principle and the cause is crucially set out in predication terms, in which something is said of an item that is different from it (in nature, I submit). Here are the central passages which exploit this predication idea taken from the logical investigation of *Metaphysics* Z4–5:

One asks why always in this way, why one thing belongs to some different thing [ζητεῖται δὲ τὸ διὰ τί ἀεὶ οὕτως, διὰ τί ἄλλο ἄλλῳ ὑπάρχει] (*Metaph.* Z17, 1041a10–11; Bostock's trans. modified).

However, one could ask why a man is such a kind of animal. It is clear that this is not to ask why one who is a man is a man. So what one asks is why it is that one thing belongs to some other thing [τὶ ἄρα κατὰ τίνος ζητεῖ διὰ τί ὑπάρχει]. (It must be evident that it does belong, otherwise nothing is being asked at all.) Thus one may ask why it thunders; for this is to ask

matter (as a sort of matter with certain structural features). Indeed, Burnyeat's claim that the non-logical matter-form distinction is not in place before 1041a32 does not seem at all plausible. In the artefact example of a house, Aristotle indirectly invokes matter, since he refers to the bricks and stones which make up a house (1041a26–27).

why a noise is produced in the clouds, and in this way what is sought is one thing predicated of a different thing [διὰ τί ψόφος γίγνεται ἐν τοῖς νέφεσιν; ἄλλο γὰρ οὕτω κατ' ἄλλου ἐστὶ τὸ ζητούμενον] (1041a20–26; Bostock's trans. slightly modified).

One is particularly liable not to recognise what is being sought in things not predicated one of another [λανθάνει δὲ μάλιστα τὸ ζητούμενον ἐν τοῖς μὴ κατ' ἀλλήλων λεγομένοις], as when it is asked what a man is, because the question is simply put and does not distinguish these things as being that [διὰ τὸ ἀπλῶς λέγεσθαι ἀλλὰ μὴ διορίζειν ὅτι τάδε τόδε]. But we must articulate our question before we ask it [ἀλλὰ δεῖ διαρθρώσαντας ζητεῖν]; otherwise we shall have a case of asking both something and nothing (1041a32–b4; Bostock's trans.).

In the first two passages it is argued that the proper formulation of the *explanandum* – the structure which clearly renders essence the *explanans* sought for – is predicational. For the *explanandum* is (for example) a certain type of noise belonging to the clouds (in the case of thunder) or a specific structure belonging to a certain kind of organic body (in the case of human being). Unsurprisingly, these types of *explanandum* coincide with the conclusions of the demonstrative proofs offered as examples earlier.

In the third passage, by contrast, Aristotle notes that an *explanandum* may be formulated without any predicational structure at all, or it may have only an opaque predicational form. In the light of the crucial theses (1) and (2), a question such as “What is a human?” could be understood as “Why is a human (as it is)?” or “Why is there a human?,” where the term “human” (or even the attribute being a human) is not predicationally formulated (1041b1: διὰ τὸ ἀπλῶς λέγεσθαι). Because the *explanandum* lacks predicational form, it is unclear whether there is an *explanans* – an essence which functions as a principle and a cause – and if so, what this essence might consist in. Aristotle's suggestion is to articulate the *explanandum* into predicational shape by bringing out its underlying structure of “different things being said of each other” (1041a33: κατ' ἀλλήλων λεγομένοις) or by specifying that its being presupposes that “this sort of entity is thus-and-so” (1041b2: διορίζειν ὅτι τάδε τόδε). In the present example, this implies that the articulated *explanandum* matches the predicational structure of the conclusion of the proof sketched earlier regarding the kind human: “why does this specific structure belong to this certain type of functional/organic body?”

It is worth emphasizing that in all three of the passages just quoted Aristotle describes the appropriate predicational structure of the *explanandum* as a case in which something is said of something different (in nature) from it (1041a11: ἄλλο ἄλλῳ ὑπάρχει; 23: τὶ ... κατὰ τινος ... ὑπάρχει; 25–26: ἄλλο ... κατ' ἄλλου; 33: κατ' ἀλλήλων λεγόμενοι; b2: ὅτι τάδε τόδε). This clearly entails that the *explanandum* satisfies the predicational requirement of categorial unity in the manner of *Metaphysics* Z4 (1030b8–12), for in it one attribute is attached to one subject in one or another of the distinct modes of the categories. At the same time, however, Aristotle implies that the *explanandum* falls short of the primacy condition, for it involves a structure in which two predicationally interconnected things are different in nature from each other. Because it is non-primary in this fashion, then, the *explanandum* discussed in *Metaphysics* Z17 depends on the primary entity that essence is.

In *Metaphysics* Z4 the relevant sort of dependency is simply definitional. For, as noted in section 4, while the definition of a (type of) substance satisfies the primacy condition in that it does not mention anything different in nature from this (type of) substance, the definition of a non-substance attribute must mention the (type of) substance to which this attribute belongs. In *Metaphysics* Z17, by contrast, the dependency at issue is also causal and explanatory. The predicationally articulated *explanandum* depends for its being on the corresponding *explanans* – the substance, principle and cause that its essence is. In the previous example, the essence of the kind human, its being a rational soul of the relevant sort, is the principle and (final) cause which explains why this specific structure belongs to this certain type of organic body.

It should be pointed out that the logical resources of *Metaphysics* Z4–5 – the notions of primacy, difference (or non-difference) in nature, and categorial unity – are radically enriched in *Metaphysics* Z17. Alongside the novel, *explanans-explanandum* schema, Aristotle employs the concepts of principle, cause, and specific, efficient, or final types of causation. Furthermore, he identifies substance as essence with these non-logical concepts. In this way, he expands the predication-laden primacy condition which could not, by itself, yield anything over and above the thin notion of essence.

His non-logical claims, however, do not range only over the *explanans* that essence consists in. The *explanandum*, too, is developed in distinctively non-logical directions. First, it does not simply involve a predicational structure which is categorially unified but fails to cover the primacy condition. The appropriately shaped *explanandum* is not merely a case where some non-sub-

stance attribute belongs to a substance which functions as its subject but is different in nature from it. Rather, it includes (for example) essential features mentioned in the definition of a (type of) object. While these features are essential, they are not fundamental, for their presence is explained by reference to further, more basic features mentioned in the relevant definition. Consider our sample definition of the kind human:

Human [TYPE] =_{def} a certain type of organic/functional body arranged in this specific structure for the sake of being a rational soul.

Here the basic part of the essence, the final cause that being a rational soul is, explains why another, non-basic part of the essence is as it is: for it explains why this specific structure belongs to this type of functional body. In doing so, it also fixes the identity of this specific structure of the human body, for as codified in (2), causation and identity fixing are inseparably interdependent. Further, because the *definiendum* is identified with this type of organic body having this specific structure, it too (or its being) is explained (and has its identity fixed) on the basis of the fundamental part of the essence, the final cause being a rational soul.

Similarly, it is not hard to imagine how this fundamental entity, perhaps in conjunction with the rest of the essence, could explain the presence of further, non-essential but necessary features of the kind, such as its *propria*. For example, being capable of laughing belongs to all and only humans *because* the kind human is essentially this sort of organic body with this specific structure for the sake of being a rational soul. The first addition to the logical material, then, is that the non-primary, explanatorily dependent predicational structures consist of (*inter alia*) non-basic, essential or necessary features belonging to the kinds which possess the relevant explanatorily primary essences.

The second non-logical addition that *Metaphysics* Z17 makes is the distinction between matter and form. The predicationally structured *explanandum* discussed in this chapter is not simply a (non-substance) attribute belonging to a (substance) subject. Rather, the relevant subject is a certain sort of constituent matter, while the attribute possessed by this matter is a corresponding type of shape, arrangement, configuration, or structure. What explains why these structural features belong to the matter, by contrast, and what fixes their identity, is the essence understood as form or formal cause (1041b8: τὸ εἶδος).

[I]t is clear that the question must be why the matter is [thus-and-so]³⁷; for instance, the question may be “Why are these things here a house?”³⁸ Because what-it-is-to-be a house [ὅ ἥν οἰκία εἶναι] belongs to them. And “Why is this thing here or this body with this feature a man?”³⁹ So what is

- 37 Both Ross and Jaeger adopt Christ’s conjecture and add a second τί at 1041b5 in the phrase τὴν ὕλην ζητεῖ διὰ τί ἐστίν, thereby rendering it διὰ τί <τί> ἐστίν. This emendation seeks to align the text with the idea that the cause being sought for is something that explains why some (material) entity has some attribute or other. Without the extra τί, it is argued, the text would imply that the cause explains why matter simply is, that is, why it exists. At the beginning of this sentence, however, at 1041b4–5, Aristotle maintains that existence is not to be explained but is already assumed. I agree that the cause under investigation is an entity that explains why matter possesses the features it does; however, I do not think that the emendation is necessary. The phrase τὴν ὕλην ζητεῖ διὰ τί ἐστίν can be understood elliptically as “why matter is [as it is]”: for the ἐστίν can be taken not as existential but as predicative and so as completable by an understood predicate.
- 38 The details of the present example οἶον οἰκία ταῦτι διὰ τί are extremely controversial. (Similar difficulties arise from the earlier occurrence of the same example at 1041a26–27.) If ταῦτι at 1041b6 is the subject and οἰκία is the predicate, the *explanandum* is “Why are these types of material a house?” If the syntax is to be understood conversely, Aristotle is asking “Why is the house (made up of) these types of material?” One could argue even that the example is formulated misleadingly. From the discussion of the *Analytics* it is clear that the *explanandum* is the conclusion of a proof. This conclusion, however, does not mention the kind of process under investigation. For example, the conclusion of the thunder-related demonstration is “Noise belongs to the clouds,” not “Noise belongs to thunder.” If so, the conclusion of corresponding proofs regarding substance kinds should not contain references to the kind in question. Hence, the *explanandum* should not include the term “house” at all. Aristotle’s question, then, should be “Why are these types of material arranged in this manner?” or “Why do they have the features they have?” There is no reason to engage in this debate. My argument is simply that what is explained by the essence or form are the attributes of the type of matter involved in the kind house.
- 39 Again the phrase καὶ [sc. διὰ τί] ἀνθρώπος τοδί, ἡ τὸ σῶμα τοῦτο τοδί ἔχον can be interpreted in different ways, even if we ignore the textual variations at 1041b7 (some manuscripts have ὁδί instead of the first τοδί; some omit the τοῦτο after σῶμα; some commentators prefer ὡδί instead of the second τοδί on the basis of Ps.-Alexander’s paraphrase). The first part of the sentence (καὶ [sc. διὰ τί] ἀνθρώπος τοδί) suggests that the *explanandum* is either “Why is this type of body a man?” or “Why is man (made up of) this type of body?” The second part (ἡ τὸ σῶμα τοῦτο τοδί ἔχον) could be either stating a genuine alternative or correcting and clarifying the first attempt at formulating the question. It seems more plausible to take the second part as reformulating the first in a clearer way. If so, the *explanandum* would be either “Why is this type of body with this feature a man?” or “Why is man (made up of) this type of body with this type of feature?” On an alternative (perhaps more attractive) reading, Aris-

sought is the cause of matter (and this is the form) by which the matter is thus-and-so [ὥστε τὸ αἴτιον ζητεῖται τῆς ὕλης (τοῦτο δ' ἐστὶ τὸ εἶδος)⁴⁰ ᾧ τὸ ἐστίν]. And that is the substance (*Metaph.* Z17, 1041b5–9; Bostock's trans).

Using examples of artefact types and natural-substance kinds, Aristotle characterizes the metaphysical subject of predication involved in the *explanandum* as (for example) the types of brick, stone, and mortar making up a house, or the functional sort of body constituting a human. Further, the attributes predicated of these kinds of subject are (for example) the covering that bricks, stones, and mortar are shaped into, or the specific physical arrangement that the human body has. The *explanans*, on the other hand, is identified with form: the form, too, just as the essence at 1041a27–28, is a principle and a cause *in virtue of which* the matter possesses certain features [1041b7–8: τὸ αἴτιον ζητεῖται τῆς ὕλης (τοῦτο δ' ἐστὶ τὸ εἶδος) ᾧ τὸ ἐστίν]. Aristotle's conclusion is that substance just

totle uses the phrase ἢ τὸ σῶμα τοῦτο τοδὶ ἔχον to structure more cautiously his considered formulation of the *explanandum*. In this formulation the substance kind human is not mentioned at all in the conclusion of the demonstrative syllogism that grounds the *explanandum* in question. This is because the *Analytics* model, which guides the discussion of *Metaphysics* Z17, avoids mentioning the kinds (e.g., thunder or eclipse) in the conclusions to be explained. In light of this, the *explanandum* should be “Why does this type of body possess this feature?” Thus, the second part of 1041b6–7 should be understood as ἢ [sc. διὰ τί] τὸ σῶμα τοῦτο [sc. ἐστίν] τοδὶ ἔχον (the syntax of ἐστίν plus the participle ἔχον would be extremely telling here: first, it would emphasize that this type of body *indeed* possesses this attribute as an established fact that stands in need of explanation by reference to form/essence; second, it would refer back to the background assumption of the argument, stated at 1041b4–5, that the causal inquiry does not seek but already possesses the knowledge that this type of matter has this feature). This view could be supported by the examples offered in *Metaphysics* H2–3, where the causal-explanatory model is further set out. In that context, what gets explained by the form or essence is not why a certain type of matter falls under a particular kind. Rather, the form or essence explains why a certain type of matter possesses specific structural features which are characteristic of a determinate kind. Why is this type of wood/stone positioned as it is (for the threshold kind)? Why are these types of bricks and planks structured in this shape (for the house kind)? Why is water solidified (for the ice kind)? Why are high and low sounds mixed in this ratio (for the harmony kind)? (H2, 1043a5–12; cf. H3, 1043b4–10.) I shall not examine these issues in any further detail, as my general argument is relatively independent of them.

40 Jaeger has no compelling reason for excluding the parenthetical clause τοῦτο δ' ἐστὶ τὸ εἶδος, which brings together the notion of cause with that of essence or form. Frede and Patzig also delete this bracketed clause (*Aristoteles: Metaphysik Z* [Munich, 1988], [2: 317–318]).

is this principle and cause, the one identified with form (b7–8: τοῦτο δ' [sc. τὸ αἴτιον/τὸ εἶδος] ἢ οὐσία). If this is correct, the non-logical inquiry of *Metaphysics* Z17 not only sets out the attribute-subject predication structure by reference to the *explanandum-explanans* schema. It also matches the latter schema with the crucial non-logical distinction between matter (having certain features) and form (as essence, principle, and cause).⁴¹

It may be asked at this juncture whether – and if so, in what way – the notion of form makes any progress relative to the logical concept of essence. An obvious answer is that form is a crucial component of the non-logical matter-form distinction. By deploying the notion of form Aristotle can show how the principle and cause that essence discharges the causal-explanatory role of making matter what it is. It does so by being the form which accounts for the matter's possession of the features it has. It may be doubted, however, whether this idea is significantly different from the way in which the logical concept of essence by itself is supposed to operate as a principle and cause. After all, there are several passages, in the *Metaphysics* and elsewhere, where the logical apparatus of essence (or what it is to be *F*) is fully identified with the allegedly non-logical concept of form or formal causation (e.g., *Metaph.* Z7, 1032b11–14; *Phys.* 2.2, 194a20–21; 2.3, 194b26–27). In these contexts (it may be argued) it is unclear whether the notion of form adds anything significant to that of essence. It may be concluded, then, that the concepts of form and essence do not really advance beyond the logical level of inquiry.

There are two possible (and not mutually exclusive) replies to this objection. First, Aristotle could simply agree that the logical notion of essence and the non-logical concept of form pick up exactly the same types of thing: the principles and (final or efficient) causes which fix the identity of substance kinds as well as their matter, and explain the presence of their derivative necessary features. At an abstract level of analysis, however, the two notions are intentionally distinct, even if (speaking in concrete metaphysical terms involving causation and explanation) they are intrinsically interdependent. For, while essence operates as a principle and cause within the logical, predication framework of attribute-subject structures, form is a principle and cause of why matter is as it is, and why certain features belong to it. If so, form makes a distinctive, non-logical contribution to Aristotle's inquiry into primary substance.

41 For a more detailed discussion of my view of the causal-explanatory model as introduced in the *Analytics* and expanded in *Metaphysics* Z17 (and H2–4), see my *Priority in Aristotle's Metaphysics* (Oxford, 2011), 176–200.

Second, we could argue that while the non-logical notion of form is richer than that of essence, it is not as charged as the causal concepts of final or efficient causation. It is noteworthy that at *Metaph.* Z17, 1041a27–30, where Aristotle identifies the logical notion of essence with final or efficient causation, he fails to mention formal causation, despite the fact that the latter too is one of the types of cause that he distinguishes.⁴² A conjectural suggestion might be that the notion of form or formal causation is omitted as it is not sufficiently strong to fix the direction of causal asymmetry in the way in which final or efficient causation does, for there are cases in which *x* can be taken as the formal cause of *y*, or *conversely*. In this respect, form, or formal causation, resembles the logical notion of essence. To offer a mathematical example, the line (or its being) might be seen as the formal cause of the figure, for being a set of lines arranged in a certain fashion makes a figure what it is. Equally, however, this case can be treated in the opposite direction of formal causation, for being a line is, arguably, to be the limit of some figure or other.

However, it does not follow from this that the notion of form or formal causation is merely logical in precisely the same way as essence is. Form or for-

42 Burnyeat would deny my claim that form is weaker (or “more logical”) than the purely non-logical notions of final or efficient causation. He would also offer a different explanation for Aristotle’s omission of formal causation from the list at 1041a29–30. For as noted earlier, he takes (mistakenly, in my view) the overall discussion up to 1041a32 as logical. Hence, he sees final and efficient causation as ways in which to specify, *within the logical level*, the abstract notion of essence. Further, he argues that formal causation is omitted from this list because it would be out of place in this section’s logical inquiry. In his view, it is exclusively matter and form which introduce the non-logical discussion of *Metaphysics* Z17 at 1041a32–b9, and which provide this chapter’s key solution: “so far [up to 1041a32], Aristotle has been emphasizing that fruitful causal inquiry presupposes a question with the non-tautological predicative structure ‘Why is X Y?’ As usual, the form–matter analysis comes to the rescue” (*Map*, 59). In Burnyeat’s view, then, only the form–matter distinction can salvage cases of a simple or unarticulated *explanandum* such as “Why is a human (as it is)?” or “Why is there a human?” It seems, however, that such cases are first dealt with at the logical level: for they are reshaped into predicative subject–attribute structures independently of the matter–form distinction (1041a16: ‘Why is the moon eclipsed?’; a25: ‘Why is noise produced in the clouds?’). Moving on to the first stage of the non-logical level, we can articulate these predicative structures in hylomorphic terms in which the matter possesses certain structural features. At the next stage of the non-logical level, we can offer the correct explanation by reference to the final or efficient cause identified with a kind’s essence and form. Contrary to what Burnyeat seems to think, form and matter do not by themselves constitute an Aristotelian panacea for an unarticulated *explanandum*. Aristotle also emphasizes the important contributions of the logical level, as well as the non-logical notions of final and efficient causation, which are far stronger than the hylomorphic framework.

mal causation automatically invokes its conceptual correlate of matter, as well as the matter's physical shape or structural features. In this way, form contributes substantively to the successful articulation of the *explanandum*. It is only by having this sort of "matter with features" structure that the *explanandum* can receive as its *explanans* the final or efficient cause that substance – as essence and form – is identical with. If so, the notion of form or formal causation inherently carries with it the asymmetry of efficient or final causation more directly and conspicuously than does the merely logical concept of essence.

To clarify this point, let us take up the artefact example of the type house. On the basis of the notion of form we can articulate the house-related *explanandum* as the specific sorts of matter (bricks, stones, and mortar) having the shape of a covering of the relevant type. Further, because the formal cause of the house just is its final cause – for example, to protect humans and their belongings from heat, wind, and rain – it explains why this shape belongs to that matter. This teleologically identified form also makes the covering shape (the one which belongs to bricks, stones, and mortar) what it is. By contrast, it would be difficult to reverse the direction of final causation, for it seems incorrect to think that the *telos* of protecting humans and their belongings is as it is, or possesses the functional features it has, for the sake of the matter's covering shape. For the same reason it is implausible to take the identity-fixing relation in the opposite direction, for protecting humans and their belongings seems to make this sort of covering shape what it is, *but not conversely*.⁴³

Because of its intrinsic link to the matter included in the appropriately articulated *explanandum*, therefore, form is conceptually more proximate to, and more cognate with, the non-logical notions of final and efficient causation than essence is. Figuratively speaking, form or formal causation could be described as a "bridging" notion, one with which Aristotle achieves the transition from the merely logical, predicationally permeated concept of essence, or what it is to be *F*, to the strongly non-logical, full-fledgedly causal notions of final or efficient causation. This transitional role of formal causation is crucial in sustaining the coexistence and integration of the logical with the non-logical aspects of *Metaphysics* Z17 as outlined in the present section.⁴⁴

43 I examine in more detail this asymmetry issue concerning formal, final, and efficient causation in my *Priority*, 266–267.

44 This bridging function of the notion of formal causation might give rise to the following interesting suggestion. While the predication material (at least partly) con-

6. Conclusion: Merits of the Predicational Reading

It is important to highlight the exegetical advantages of my predicational interpretation of λογικῶς as a way of reading several parts of *Metaphysics* Z. To do so, I shall describe some of the general features, differences, and shortcomings of the logical inquiry of *Metaphysics* Z4–5 relative to other, non-logical parts of this book. Not only can the predicational interpretation explain neatly all these crucial points, it can also illustrate Burnyeat's general view that logical contexts do not involve important metaphysical distinctions or presuppose the principles proper to the science of first philosophy.

First, the matter-form distinction is alien to the purely or predominantly predicational account of essence and definition. In this respect, this logical account differs radically from views such as those described in *Metaphysics* Z10–11 and Z17. A possible reason for this difference is that material and formal attributes are virtually indistinguishable in the predicational conceptual framework of *Metaphysics* Z4–5. Take, for instance, the following definitions:

Triangle =_{def} three-sided/angled closed plane figure.

White surface =_{def} being white belonging to a surface.

The predicational approach cannot distinguish between the quasi-material entities referred to by "figure" or "surface" and the quasi-formal features described by "being a three-sided/angled closed plane figure" or "being white." It implies only that the former are underlying subjects to which the latter belong as attributes. This is not the same, however, as the metaphysically important matter-form distinction.

To provide a different example: it is remarkable that in *Metaphysics* Z5 the "coupled" attribute snubness does not receive its usual treatment as a com-

stitutes the logical framework of *Metaphysics* Z4–5 which is also inherited by Z17, and the strong notions of final and efficient causation are salient parts of the clearly non-logical (perhaps even "physical" or "metaphysical") inquiry of *Metaphysics* Z17, the intermediate concept of form or formal causation operates at what Aristotle calls the "analytical" level (ἀναλυτικῶς), a style of investigation which seems intermediate between λογικῶς and non-λογικῶς. The idea that formal causation is a transitional concept which closes the gap between essence and (final or efficient) causation may be congenial to this suggestion about the analytical level, but need not be identified with it. However, important though it may be, this suggestion falls well outside the scope of my present concerns.

pound consisting of the formal feature being concave and a nasal material substrate (see, for example, *Metaph.* Z10, 1035a4–6; 25–27; Z11, 1037a29–33; cf. E1, 1025b30–1026a6; *Phys.* 2.2, 194a12–15). Rather, its components are understood independently of the matter-form distinction, simply in terms of an attribute (being concave or concavity) which belongs to a subject (the nose) in the way of *per se*₂ attributes (1030b16–20). For, as Aristotle claims, being concave (in the nasal fashion?) and being snub do not belong incidentally to nose but are essentially defined by reference to it. He compares this case with the attributes of being male or being female, the definition of which mentions the subject animal to which they belong in the relevant *per se* mode (1030b21–26). In the predicationally permeated logical context of *Metaphysics* Z5, then, even snubness – Aristotle’s favourite case for the sort of hylomorphic analysis which is prominent in Z10–11 – is viewed as an unexciting attribute-subject compound.⁴⁵

Second, in sharp contrast with *Metaphysics* Z17, Z4–5 evokes no causal or explanatory considerations. The predication framework is completely silent about the later, non-logical position that substance as essence is a sort of principle and cause. Consider, for example, the argument advanced in *Metaphysics* Z4 about compounds and their essences (1029b25–1030a2). This argument stipulates the name “cloak” for the compound white man. Further, it suggests that the most successful definition of this compound would run as follows:

Cloak =_{def} being a white man (or: being white belonging to a man).

In stipulating the name “cloak” for the compound white man the predication approach aims to bracket the issue of explanatory priority of the *definiens* over the *definiendum*. For the proposed *definiens* phrase, “being a white man,” describes an entity which could not play any substantive role in explaining why the compound, white man, is as it is. Nor could it account for any non-basic, necessary features which might belong to this compound. Without the stipulation it would be obvious that this sample definition is tautologically schematic, circular, and so explanatorily vacuous. Generally speaking, Aristotle’s logical analysis is confined to a merely predication framework in which compounds such as white man (for example) are understood by reference to the thin attribute-subject structure. For this reason, his logical arguments are

⁴⁵ The non-hylomorphic treatment of the snubness example offered in *Metaphysics* Z5 is also noted by Burnyeat, *Map*, 26.

far even from envisaging the causal and explanatory requirements for being an essence introduced in *Metaphysics* Z17.⁴⁶

Similarly, the predication approach does not even allude to the view that an essence, as a real-world entity, structures or organizes the corresponding essence-possessor into the type of thing it is. For, in this approach, Aristotle is concerned only with specific *per se* modes in which certain attributes belong to a (type of) object. *Per se* predication, however, seems completely insensitive to the explanatory relation of formal causation in which *the essence makes the essence-possessor what it essentially is* (but not conversely). *Metaphysics* Z17, by contrast, clearly identifies substance as essence with form or formal cause: a kind's essence, that *in virtue of which* certain features belong to this kind or its matter, is the form (1041b7–8: τὸ αἴτιον ... τῆς ὕλης ... ὧς τὸ ἐστίν; cf. b8: τοῦτο [sc. τὸ αἴτιον τῆς ὕλης] δ' ἐστὶ τὸ εἶδος). Moreover, formal causation, understood by reference to the notion of making something what it is, links the logical concept of essence with the weighty causal relations of final or efficient causation. This material is conspicuously absent, however, from the predication-laden discussion of *Metaphysics* Z4–5.

Third, in the earlier logical inquiry the notion of unity is understood simply as categorial or predication unity (at 1030b4–13). In negative terms: for an account to be unified in a way which would allow it to be definitional, it must not be held together simply by being continuous or by including connectives. In setting out the positive aspect of the relevant type of unity, however, *Metaphysics* Z4 does not advance beyond predication resources. Thus, a definitional account must be unified in that it must assign one attribute to one subject in one of the different ways of the categories (1030b7–13). The unity under discussion, then, is achieved in formulae such as the following:

“This (type of) thing is a man” (unified predication of substance);

“This (type of) thing is white” (unified predication of quality);

“This (type of) thing weighs 90 kg” (unified predication of quantity) etc.

Important though it may be, the unity between the subjects and the attributes picked out by such formulae is not metaphysically deep. For it does not show how an object's essence (described by the *definiens* phrase or by the predicable of

46 For an earlier treatment of this point see my “Essence,” 138 n22.

definition) makes this (type of) object *one single kind of thing*, as opposed to no kind at all, or several kinds, or merely a heap.

At this juncture, it is worth sketching an argument about unity developed in *Metaphysics* Z17 which was not examined in section 5. In the last part of this chapter (1041b11–33) Aristotle argues that substance, understood as the essence of a (type of) thing – the substance *of* that thing – is the principle and cause of being in a further way (1041b26–27: αἰτιὸν γε τοῦ εἶναι τοδὶ μὲν σάρκα τοδὶ δὲ συλλαβήν; 27–28: οὐσία δὲ ἐκάστου μὲν τοῦτο (τοῦτο γὰρ αἰτιὸν πρῶτον τοῦ εἶναι); 30–31: φανεῖν ἂν αὕτη ἢ φύσις οὐσία, ἣ ἐστὶν οὐ στοιχεῖον ἀλλ’ ἀρχή). Apart from fixing a kind’s identity and explaining why certain features belong to this kind or its matter, the *ousia* also accounts for the unity of a kind. For it is what makes the constituent matter of this kind, as well as the plethora of its necessary features, one single type of thing, as opposed to a formless conglomerate of unstructured items (1041b11–12: ἐπεὶ δὲ τὸ ἐκ τινος σύνθετον οὕτως ὥστε εἶναι τὸ πᾶν, μὴ ὡς σωρὸς ἀλλ’ ὡς ἡ συλλαβή; cf. b12–25). The merely predicational position about unity put forward in *Metaphysics* Z4, by contrast, does not even raise this question. In this respect, it may be concluded, the logical view of unity adopted early in *Metaphysics* Z is deficient.

7. *A Further Advantage of the Predicational Reading within Metaphysics Z4: The Transposed Passage at 1029b3–12*

There is a final point in favour of my view of λογικῶς. My interpretation could explain (at least partly) the manuscript position of 1029b3–12. Commentators transpose this passage from the beginning of *Metaphysics* Z4 to the end of Z3 as they fail to understand it in its traditional place. Here is how the beginning of *Metaphysics* Z4 reads in the manuscripts:

Since at the beginning we distinguished in how many ways we define substance, and one of these appeared to be the what-it-is-to-be [τὸ τί ἦν εἶναι], we must now investigate this (1029b1–2).

For it is of advantage to proceed by stages towards that which is more intelligible. For learning comes about to everybody in this way, proceeding through what is by nature less intelligible towards what is more intelligible; and this is the task, just as in conduct it is to start from what is good for us and to make what is in general good also good for us, so here it is to start

from what is more intelligible to us and to make what is intelligible by nature also intelligible to us. What is intelligible to each man at first will often be only slightly intelligible, and will have in it little or nothing of reality; nevertheless, starting from what we do understand, though we only understand it badly, we must try to understand what is in general intelligible, advancing, as it has been said, through this former [i.e. what is intelligible to us even if badly] (1029b3–12, transposed to the end of *Metaph.* Z3 by editors).

And first let us make some logical remarks about this, i.e. that the what-it-is-to-be is what each thing is said to be in itself [πρῶτον εἰπωμεν ἕναι περὶ αὐτοῦ λογικῶς, ὅτι ἐστὶ τὸ τί ἦν εἶναι ἕκαστον ὃ λέγεται καθ' αὐτό] (1029b13–14; Bostock's trans. with changes).

The first reason why commentators accept Bonitz's placement of 1029b3–12 at the end of *Metaphysics* Z3 is grammatical. In its original manuscript position, this passage leaves the prepositional phrase περὶ αὐτοῦ used at 1029b13 without anything to refer back to. With 1029b3–12 removed, however, περὶ αὐτοῦ conveniently refers back to the occurrence of τὸ τί ἦν εἶναι at 1029b2.⁴⁷

In my view, it is preferable to follow Irwin's suggestion and take the transposed passage as an explanatory parenthesis.⁴⁸ This suggestion is not equivalent to the superficial idea that we should simply punctuate the passage within brackets. Rather, it implies that this stretch of text digresses from the main argument – the inquiry into τὸ τί ἦν εἶναι – to clarify a subsidiary but related point: why our study should start from the logical examination of τὸ τί ἦν εἶναι, as opposed to (for example) the non-logical discussion of the same notion conducted in *Metaphysics* Z17, or the inquiry into form (Z7–9; Z10–11), or the study of the genus and the universal (Z12; Z13–16). If this is correct, there is no

⁴⁷ Ross, *Metaphysics* 2: 166.

⁴⁸ See Terence H. Irwin, *Aristotle's First Principles* (Oxford, 1988), 557–558 n31. My view diverges from Irwin's construal in the following respect. He thinks that from the familiar notion of essence Aristotle can approach the more obscure notion of form (ibid., 558). In my view, by contrast, *Metaphysics* Z4 proceeds from premises about predication (which are already fairly familiar from discussions in, for example, the *Analytics* and the *Topics*) to establish the logical account of the notion of essence itself. On the basis of this predication material and the logical conception of essence stemming from it – items which are “more intelligible to us” – Aristotle will later be able to clarify the relatively more demanding non-logical concepts of essence as form (*Metaphysics* Z7–9 and Z10–11) and as a specific type of principle and (final or efficient) cause (Z17).

difficulty with the reference of the prepositional phrase *περὶ αὐτοῦ*: for it refers back to the occurrence of *τὸ τί ἦν εἶναι* at 1029b2 just before the clarificatory digression. Even if the target of this backward-looking reference is not perspicuous, the *ὅτι* clause at 1029b13–14 immediately goes on to specify it: “our logical discussion is about this thing, i.e. the *τί ἦν εἶναι*, which is what each thing is said in itself.”

The second, conceptual reason for excising 1029b3–12 is (in Ross’s words) that “the *τί ἦν εἶναι* is far from being *γνώριμον ἡμῖν*.”⁴⁹ If we do not transpose 1029b3–12, Aristotle would hold that the notion of essence itself is intelligible to us, or at least more intelligible to us in comparison with the other three “ways in which *οὐσία* is said,” the ones already listed at the beginning of *Metaphysics* Z3 (1028b33–36). But is it true, ask those who transpose 1029b3–12, that the notion of essence is clearer to us than the universal, the genus, or the subject? In general, do we find the notion of essence intelligible in such a way as to be able to use it as a starting point in our inquiry into substance? Obviously, the answer given to this question by commentators is negative. If anything in the textual surroundings of 1029b3–12 fits the bill, it is not the essence but the perceptible substances mentioned at the end of *Metaphysics* Z3 (1029a33–34). Surely, because these are perceptible, we understand them better than we understand an obscure ontological notion such as essence? It is preferable, then, to place 1029b3–12 at the end of *Metaphysics* Z3, immediately after the reference to perceptible substances at 1029a34.

I shall not examine at all the grounds for transposing the passage under discussion exactly where commentators transpose it. Let me just point out that their presupposition is that perceptible objects *alone* or *primarily* are more intelligible to us and can be used as starting points of inquiry. This view is less than compelling. My aim, however, is not to criticize this view but to undermine the argument interpreters offer to show that 1029b3–12 does not plausibly belong in its manuscript position, as part of the introduction of *Metaphysics* Z4. They maintain that if it did belong there, Aristotle would be claiming that the notion of essence itself is more intelligible to us and should be used as a starting point for the discussion of substance.

However, this is not the only or most plausible way in which to understand 1029b1–14 as a whole. Aristotle begins his inquiry into substance in *Metaphysics* Z3 by enumerating “four ways in which *οὐσία* is said” (1028b33–36): the essence, the universal, the genus, and the subject. This same chapter also exam-

49 Ross, *Metaphysics* 2: 166.

ines subjecthood. *Metaphysics* Z4, on the other hand, takes up the notion of essence not because it is more intelligible to us as a starting point for the investigation into οὐσία but because it is one among the four items listed in Z3. In my view, then, Aristotle continues in *Metaphysics* Z4 the clarification of those "four ways of substancehood" which he initiated at Z3, 1028b36, with the discussion of subjecthood.

If this is correct, it is plausible to think that what is more intelligible to us is not the notion of essence itself in all its depth. For this notion is not yet entirely clear, as Aristotle has not explicated it at all; indeed, his aim in *Metaphysics* Z4 is to set out this notion. Thus, at 1029b3, Aristotle's claim that we should proceed *towards* what is more intelligible (not to us but by nature, I take it) should be understood as picking out the notion of essence, which is indeed what has been mentioned in the preceding sentence (b2–3: θεωρητέον περὶ αὐτοῦ [sc. τοῦ τί ἦν εἶναι]). If so, his investigation will gradually proceed towards an explication of this notion, which is more intelligible by nature (1029b3: μεταβαίνειν εἰς τὸ γνωριμώτερον).

The immediate target of Aristotle's inquiry, then, that "towards which" it is directed, is the notion of essence itself. This is so despite the fact that this notion is not initially familiar or intelligible to us. Rather, what we understand better at the outset are the predication-laden considerations which will support Aristotle's logical account of essence offered in *Metaphysics* Z4. These are considerations "through/from which" our investigation will proceed, premises which are initially more familiar to us, and on the basis of which we will advance our inquiry (1029b4: διὰ τῶν ἥττον γνωρίμων φύσει; b7: ἐκ τῶν αὐτῷ γνωριμωτέρων). Clearly, these considerations are not irrelevant to the target notion of essence that Aristotle is about to spell out. For this reason, they are helpful as starting points for this chapter's inquiry *into essence*. My interpretation disagrees with the competing view which holds that what is more intelligible to us should be used as a starting point for the general inquiry *into substance*. In my view, what we understand better (in the present context) functions as a starting point for directly explicating the target notion of essence even if it is indirectly helpful for the inquiry into substance too.

It should be noted, however, that although the notion of essence in its entirety is not epistemically more familiar to us, there is a specific concept of essence which is "more knowable to us" in a comparable manner. For what is clearer to us not only includes the set of predicational premises from which Aristotle will infer his logical account of essence given in *Metaphysics* Z4, but also comprises the predicationally permeated, logical view of essence which is

itself reached on the basis of these premises. This logical conception of essence is epistemically more accessible to us than are (for example) the hylomorphic account of essence given in *Metaphysics* Z7–9 and Z10–11, or the causal-explanatory model of essence offered in Z17. It is more familiar to us in this way precisely because it is derived from, and is set out by reference to, the predicational material deployed in *Metaphysics* Z4. The later, non-logical discussions, by contrast, demand more from us, even if they are epistemically more fundamental by nature, for they are significantly richer than is the readily accessible predicational apparatus of the earlier chapters.

But why are the logical premises and conclusions about essence (as opposed to the hylomorphic or the causal-explanatory account of essence) more intelligible to us, and why should they be used as starting points for setting out the notion of essence? This is where my interpretation of λογικῶς is useful. The reason is that, on my reading of λογικῶς, these are claims about what is (truly) predicated of what, and in what mode. This type of predicational material, however, is indeed introductory, and epistemically more familiar and helpful to students of metaphysics or first philosophy who have not yet mastered the discipline. Here are some points in support of this claim:

(a) Generally speaking, the predicational resources at issue are readily available to and graspable by most linguistically competent people.

(b) Similar logical material, in the form of predicational examples or structures, is invoked already in *Metaphysics* Z1, a chapter which is undoubtedly introductory and fairly innocent of the subsequent theoretical commitments of *Metaphysics* Z. For instance, the bracketed remarks at 1028a15–18 are about what we predicate of certain things, and in what way. In saying that x is of a certain quality, we do not say that x is three feet long or a man, but that x is good or bad (predication in the category of quality). In saying what x is we do not say that x is white, warm, or three feet long, but that x is a man or a god (predication in the category of substance). Further, in the *aporia* raised at 1028a20–29 about the status of entities such as walking, being healthy, etc., Aristotle concludes that they presuppose a definite subject (perhaps even a particular substance) on the basis of what he finds obvious in the corresponding predications (1028a27–28: ὅπερ ἐμφαίνεται ἐν τῇ κατηγορίᾳ τῇ τοιαύτῃ). While this sort of predicational material is generally intelligible, it should be especially accessible to Aristotle's students who immerse themselves in *Metaphysics* Z4, for they should have already familiarized themselves with the claims, arguments, and examples offered in the earlier, first chapter of *Metaphysics* Z.

(c) Suppose, for the sake of the argument, that students of Aristotelian philosophy should not “attend lectures,” as it were, about first philosophy, or at least about the λόγον περὶ τῆς οὐσίας set out in *Metaphysics* Z, without already having learned predicational material similar to what we find in the *Analytics* or the *Topics*. It is exactly this material from the *Organon*, though, which constitutes the source of, and the theoretical grounds for, the logical view adduced in *Metaphysics* Z4. Indeed, as I argued in sections 3 and 4, this seems to hold good at least for the case of *Posterior Analytics* 1.4 and 1.22 and *Topics* 1.9.⁵⁰ Assuming that learners of Aristotelian metaphysics already have a satisfactory grasp of the relevant material from the *Organon*, it follows that the predicational λογικῶς considerations of *Metaphysics* Z4 should be more intelligible and helpful to them as starting points for this chapter’s inquiry into the notion of essence.

As noted, (c) is plausible only under certain presuppositions about the content of the Peripatetic syllabus and about the temporal order of teaching or learning this syllabus. Furthermore, even if these presuppositions are sound, they do not show why the predicational logical premises of *Metaphysics* Z4 are more intelligible to us generally or to readers of *Metaphysics* Z. By contrast, (a) and (b) apply more widely and support the manuscript position of 1029b3–12 within the introduction of *Metaphysics* Z4.

There is at this juncture a general distinction which is crucial to the present discussion. Aristotle’s remarks about proceeding from what is “more familiar to us” towards “what is more knowable by nature” may be seen as characterizing the appropriate pedagogical or didactic order in which to teach or learn about essence, or they may be describing the order of discovery in which a theorist should inquire into essence. Whereas (c) focuses on the pedagogical/didactic order, (a) and (b) seem to be about the order of theoretical discovery. It would be a further, separate move – one which Aristotle may or may not be committed to – to claim that the two orders pick up the same sorts of item in that both proceed from predicational material to the logical view of essence, and from the latter to the hylomorphic and the causal-explanatory accounts of essence. What is important, however, is that in either order the starting point for further progress is what is more intelligible to us. If so, the notion of intelligibility-relative-to-us does the major explanatory work. The

50 It is worth re-emphasizing the explicitly “logical” character of the points made in *Posterior Analytics* 1.22 which seem to parallel the predicational framework of *Metaphysics* Z4: the term λογικῶς occurs at 82b35; 84a7–8; b1–2.

predicational considerations, by contrast, as well as the logical account of essence, are simply particular cases which instantiate this explanatorily basic notion.⁵¹

⁵¹ Other specific instances of (types of) items which are more intelligible to us may include perceptible particulars (as opposed to universals which are more knowable by nature) referred to at *APo.* 1.2, 71b33–a5; or indeterminate, obscure, and confused universals (versus items which are “particular” – in the sense of being determinate – and clear) discussed at *Phys.* 1.1, 184a16–b14.